EP 1 357 698 A2

FIG. 1

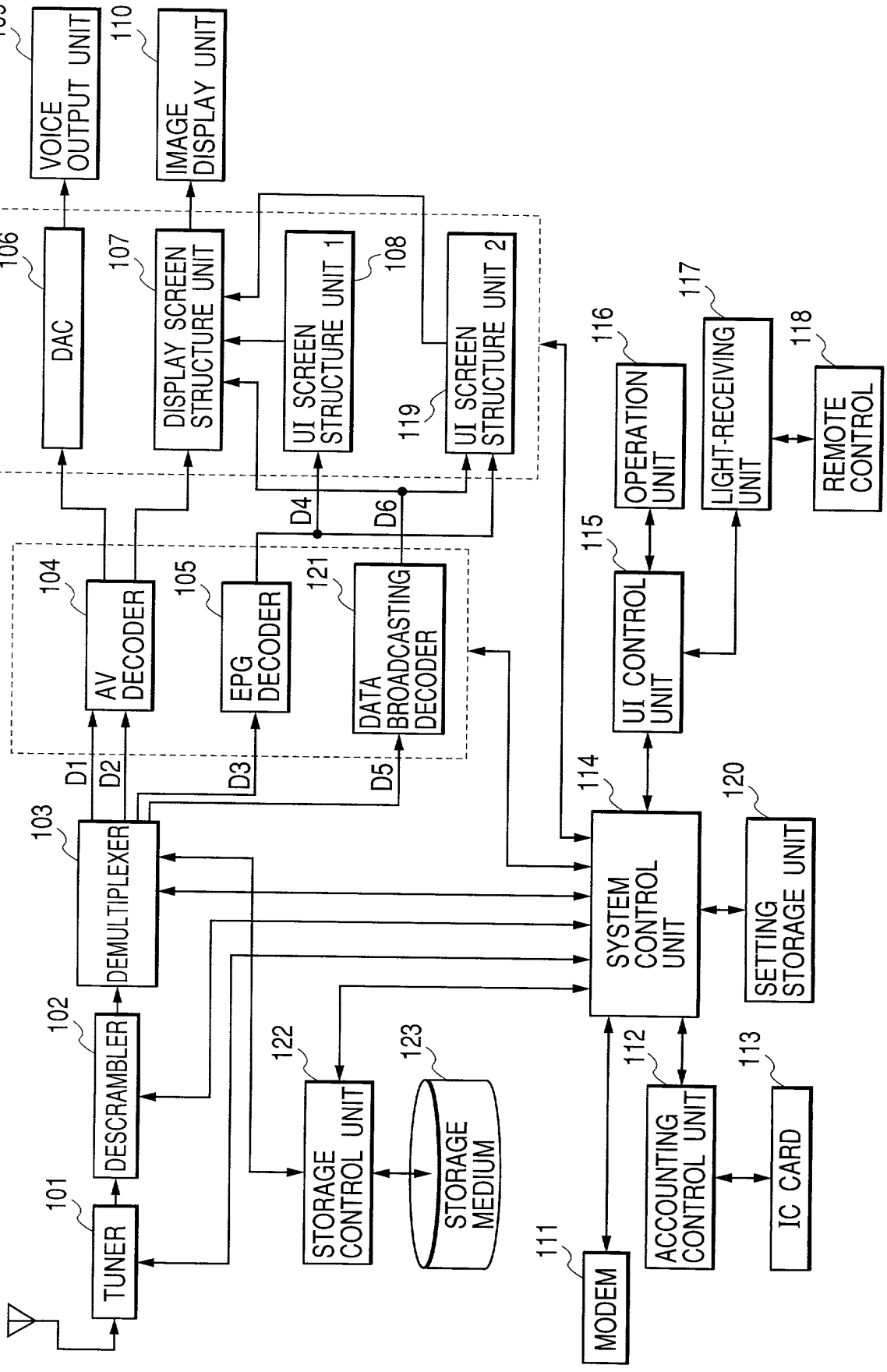

FIG. 2

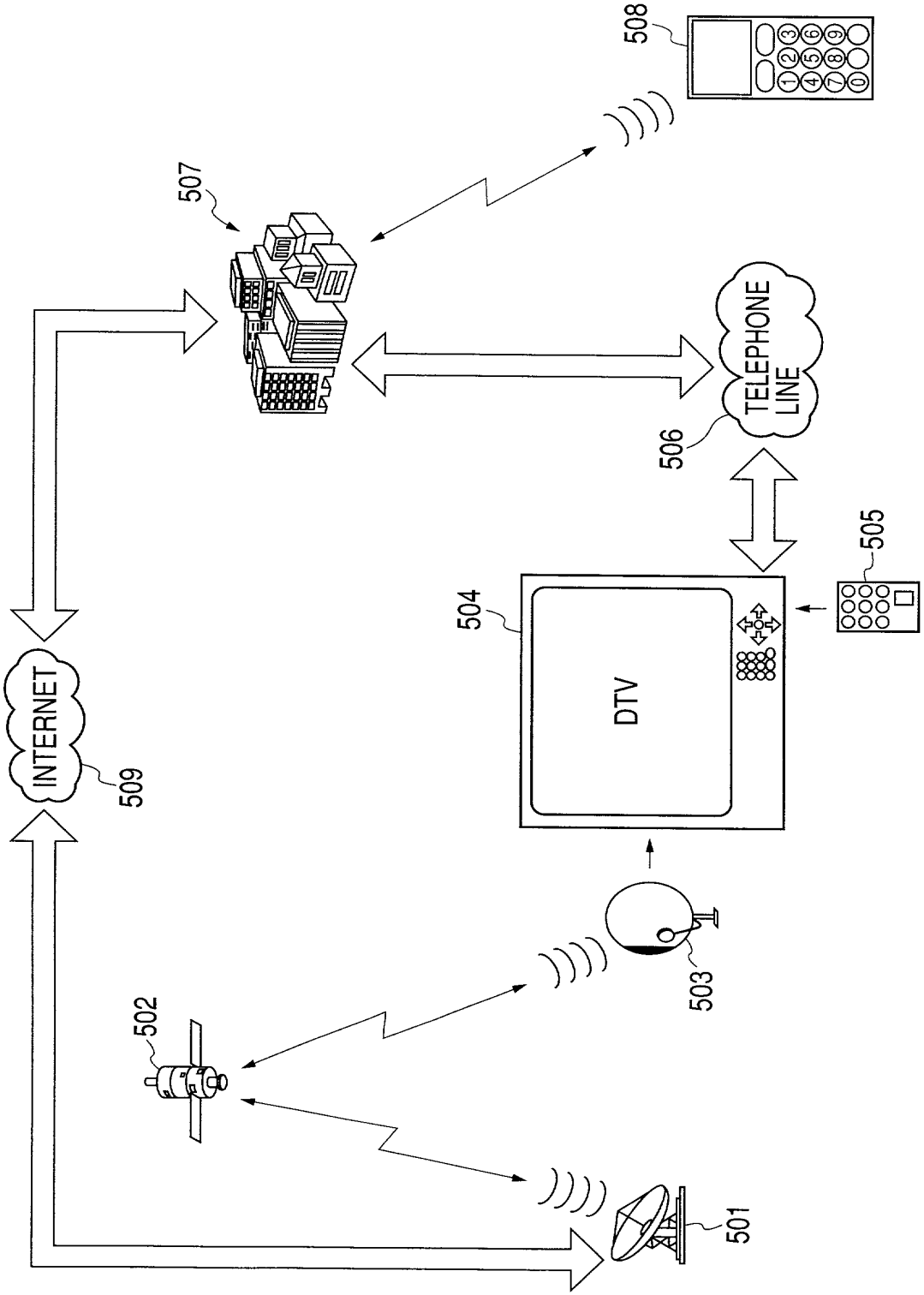
508
507
TELEPHONE LINE
506
505
504
DTV
INTERNET
509
503
502
501

FIG. 3A

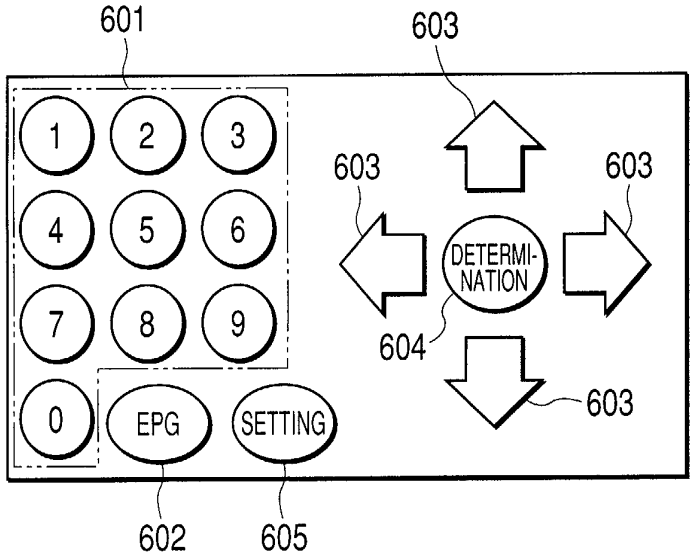
601
603
1
2
3
4
5
6
7
8
9
0
EPG
SETTING
DETERMI-
NATION
603
603
603
604
602
605

FIG. 3B

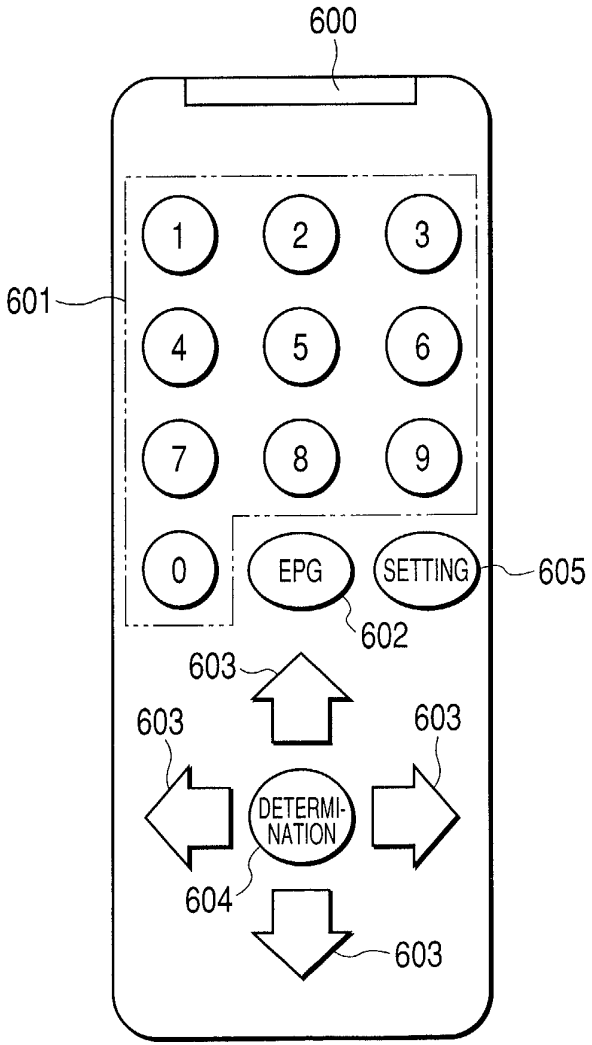
600
601
1
2
3
4
5
6
7
8
9
0
EPG
SETTING
605
602
603
603
603
DETERMI-
NATION
604
603

FIG. 4

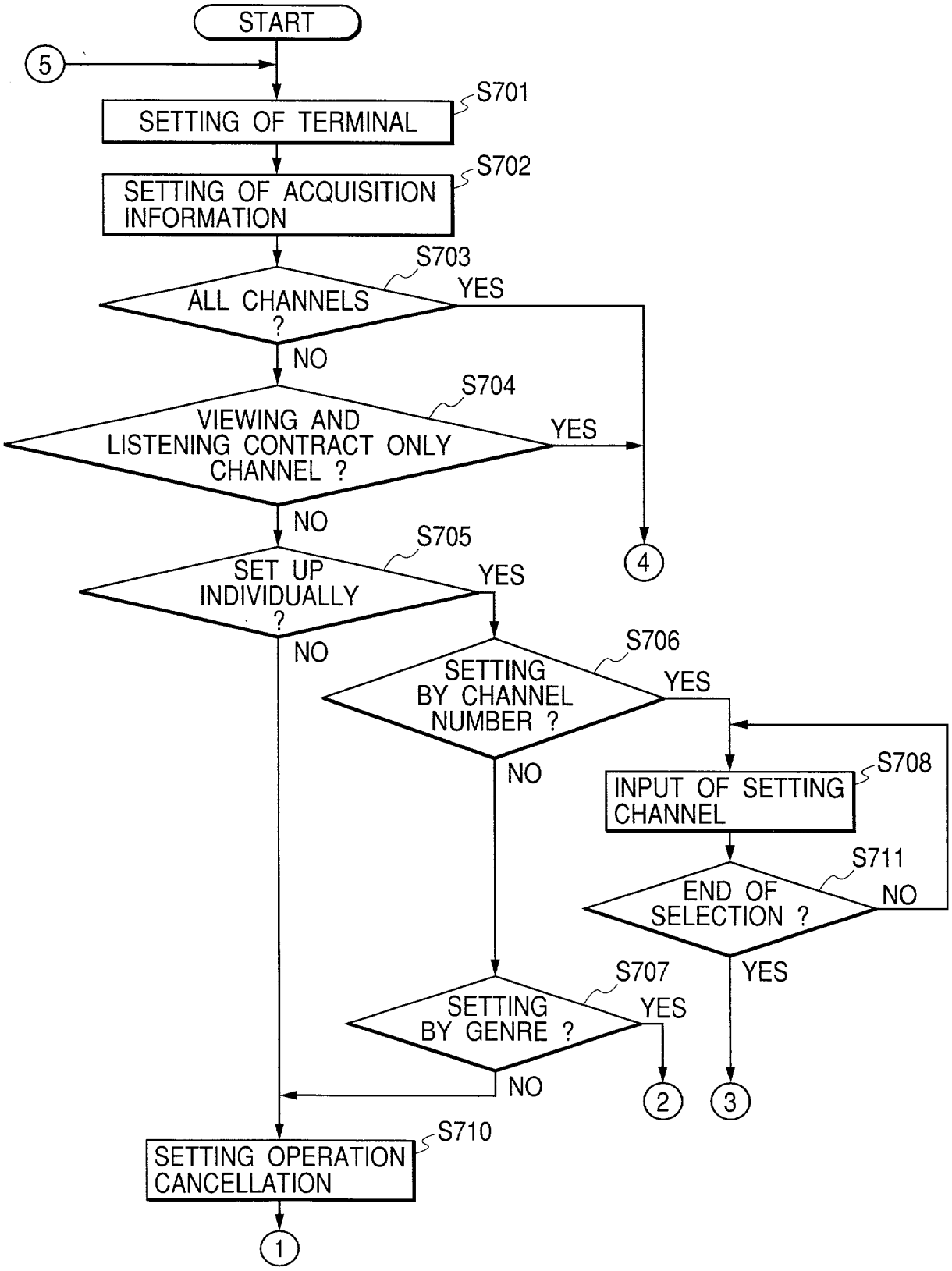
START
5
S701
SETTING OF TERMINAL
S702
SETTING OF ACQUISITION INFORMATION
S703
ALL CHANNELS ?
YES
NO
S704
VIEWING AND LISTENING CONTRACT ONLY CHANNEL ?
YES
NO
4
S705
SET UP INDIVIDUALLY ?
YES
NO
S706
SETTING BY CHANNEL NUMBER ?
YES
NO
S708
INPUT OF SETTING CHANNEL
S711
END OF SELECTION ?
NO
YES
S707
SETTING BY GENRE ?
YES
NO
2
3
S710
SETTING OPERATION CANCELLATION
1

FIG. 5

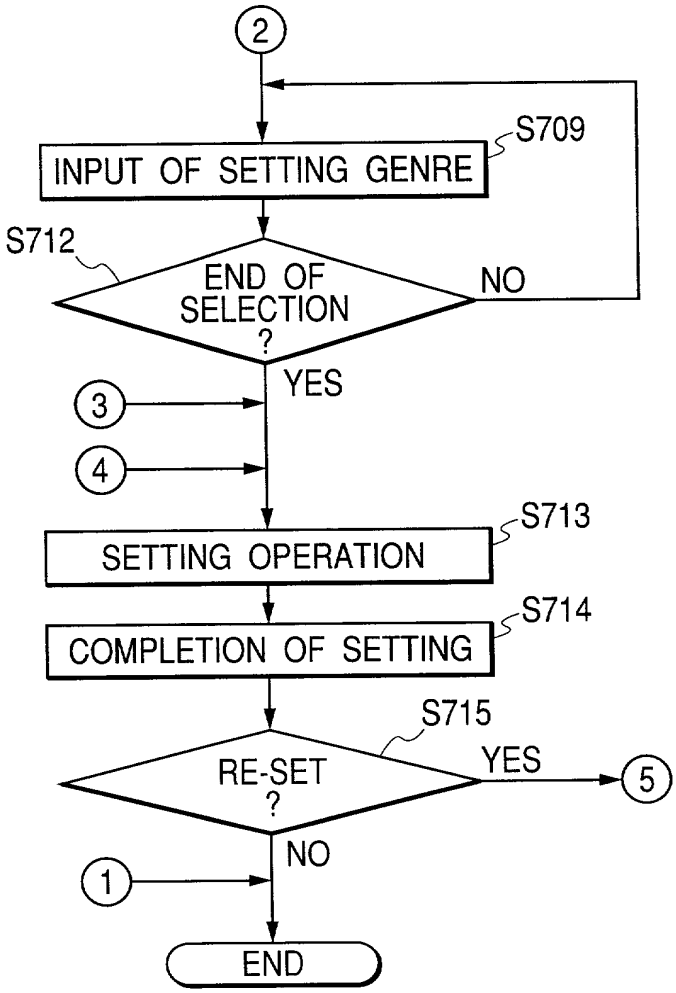

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FIG. 6A

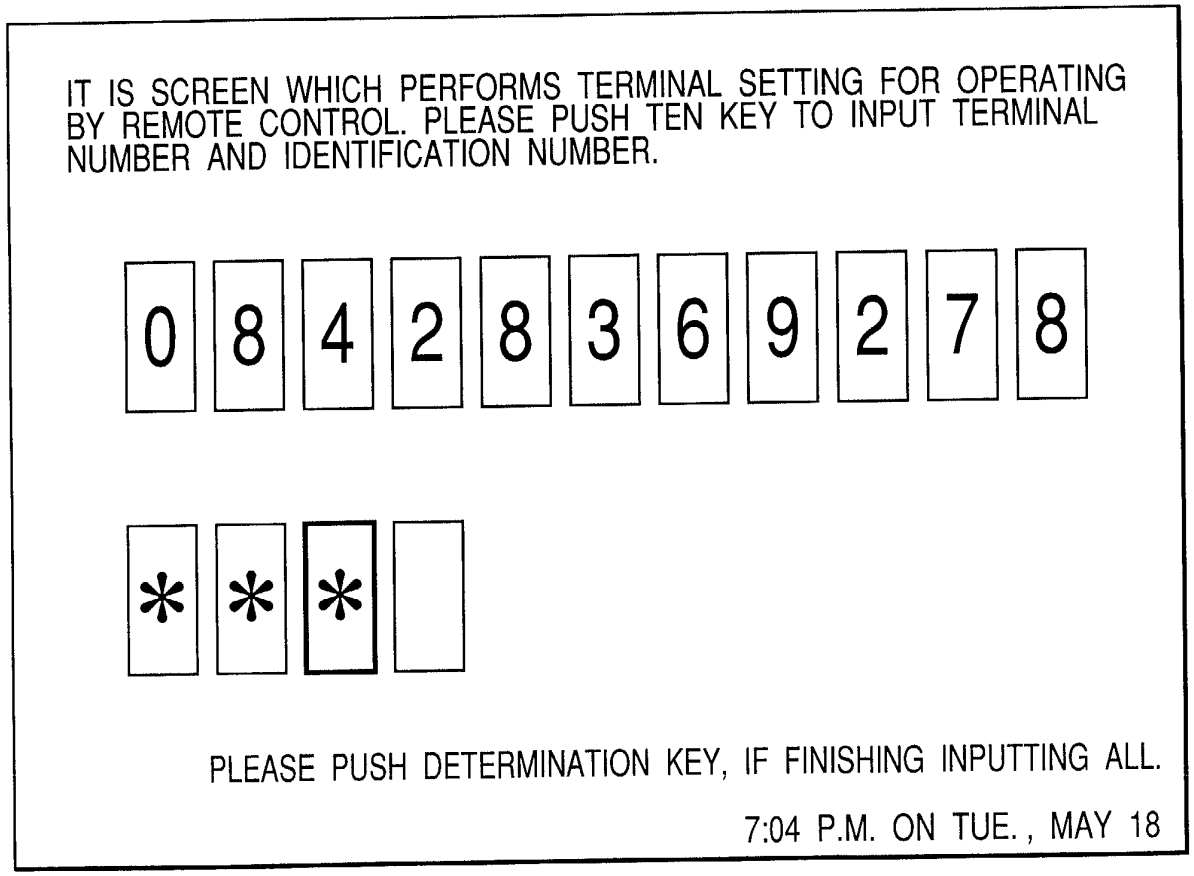
IT IS SCREEN WHICH PERFORMS TERMINAL SETTING FOR OPERATING BY REMOTE CONTROL. PLEASE PUSH TEN KEY TO INPUT TERMINAL NUMBER AND IDENTIFICATION NUMBER.
0 8 4 2 8 3 6 9 2 7 8
* * *
PLEASE PUSH DETERMINATION KEY, IF FINISHING INPUTTING ALL.
7:04 P.M. ON TUE., MAY 18

FIG. 6B

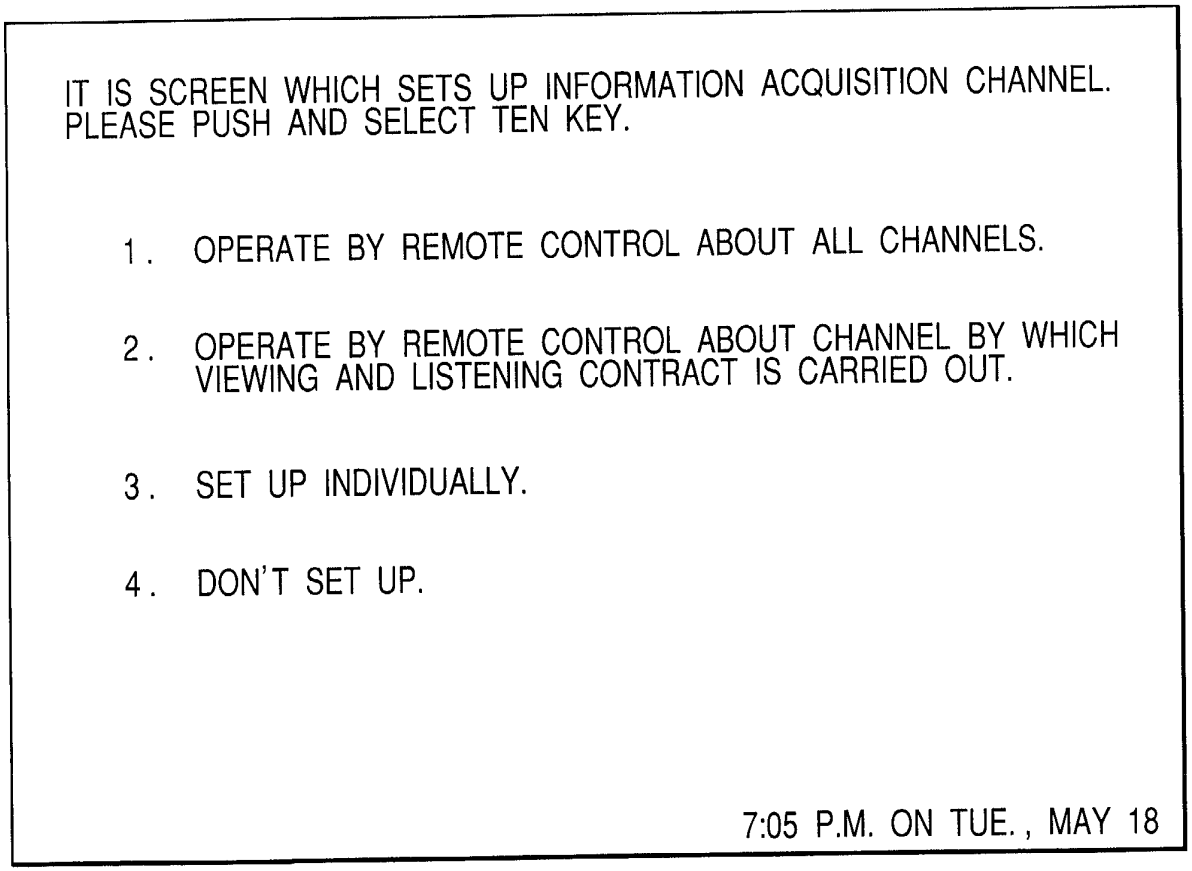
IT IS SCREEN WHICH SETS UP INFORMATION ACQUISITION CHANNEL.
PLEASE PUSH AND SELECT TEN KEY.
1. OPERATE BY REMOTE CONTROL ABOUT ALL CHANNELS.
2. OPERATE BY REMOTE CONTROL ABOUT CHANNEL BY WHICH VIEWING AND LISTENING CONTRACT IS CARRIED OUT.
3. SET UP INDIVIDUALLY.
4. DON'T SET UP.
7:05 P.M. ON TUE., MAY 18

FIG. 6C

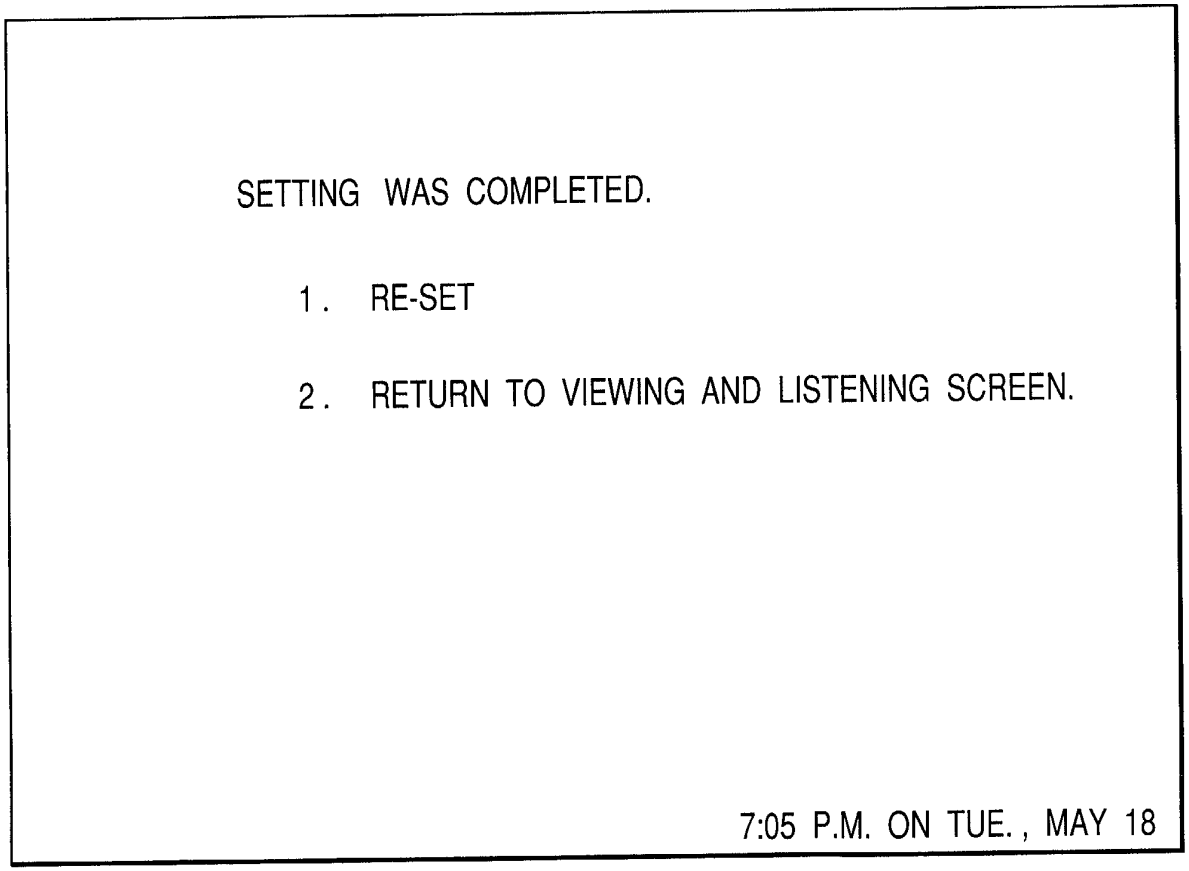
SETTING WAS COMPLETED.
1. RE-SET
2. RETURN TO VIEWING AND LISTENING SCREEN.
7:05 P.M. ON TUE., MAY 18

FIG. 6D

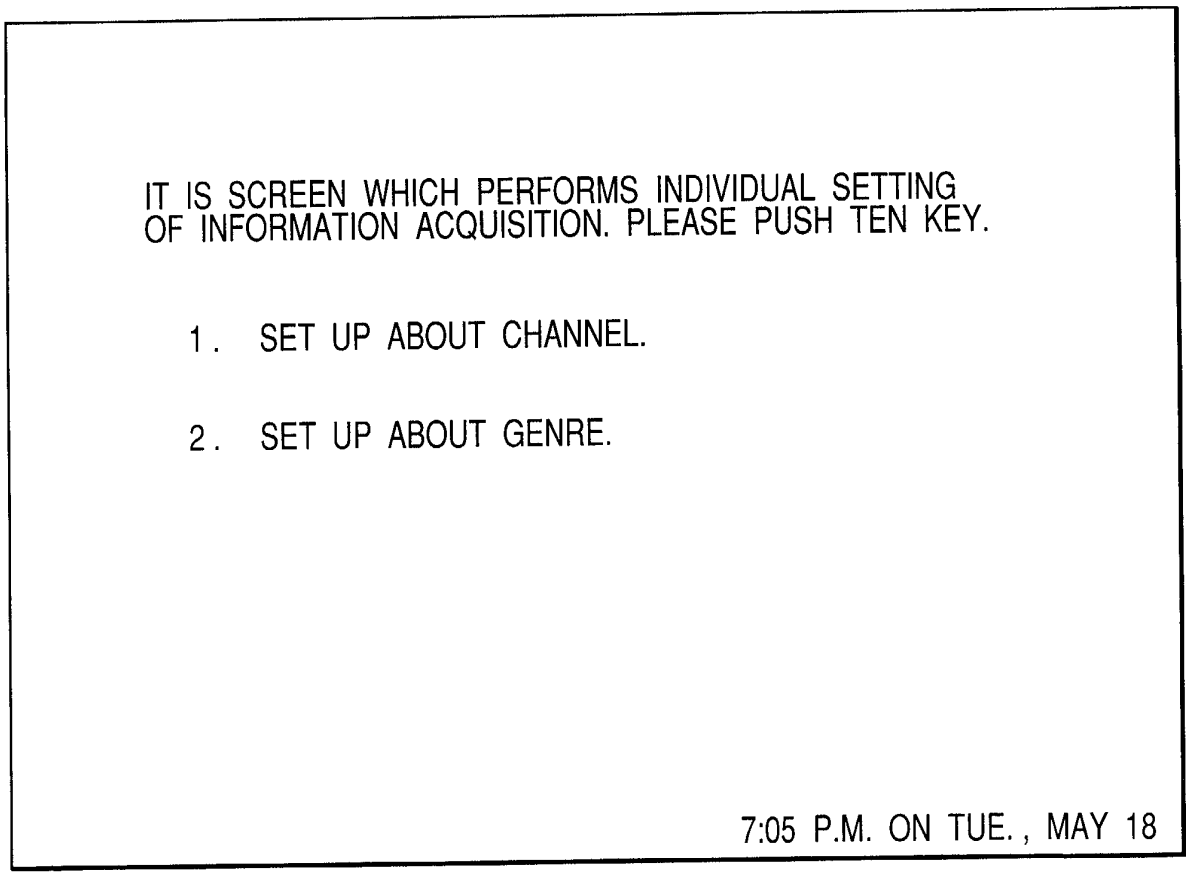
IT IS SCREEN WHICH PERFORMS INDIVIDUAL SETTING OF INFORMATION ACQUISITION. PLEASE PUSH TEN KEY.
1. SET UP ABOUT CHANNEL.
2. SET UP ABOUT GENRE.
7:05 P.M. ON TUE., MAY 18

FIG. 6E

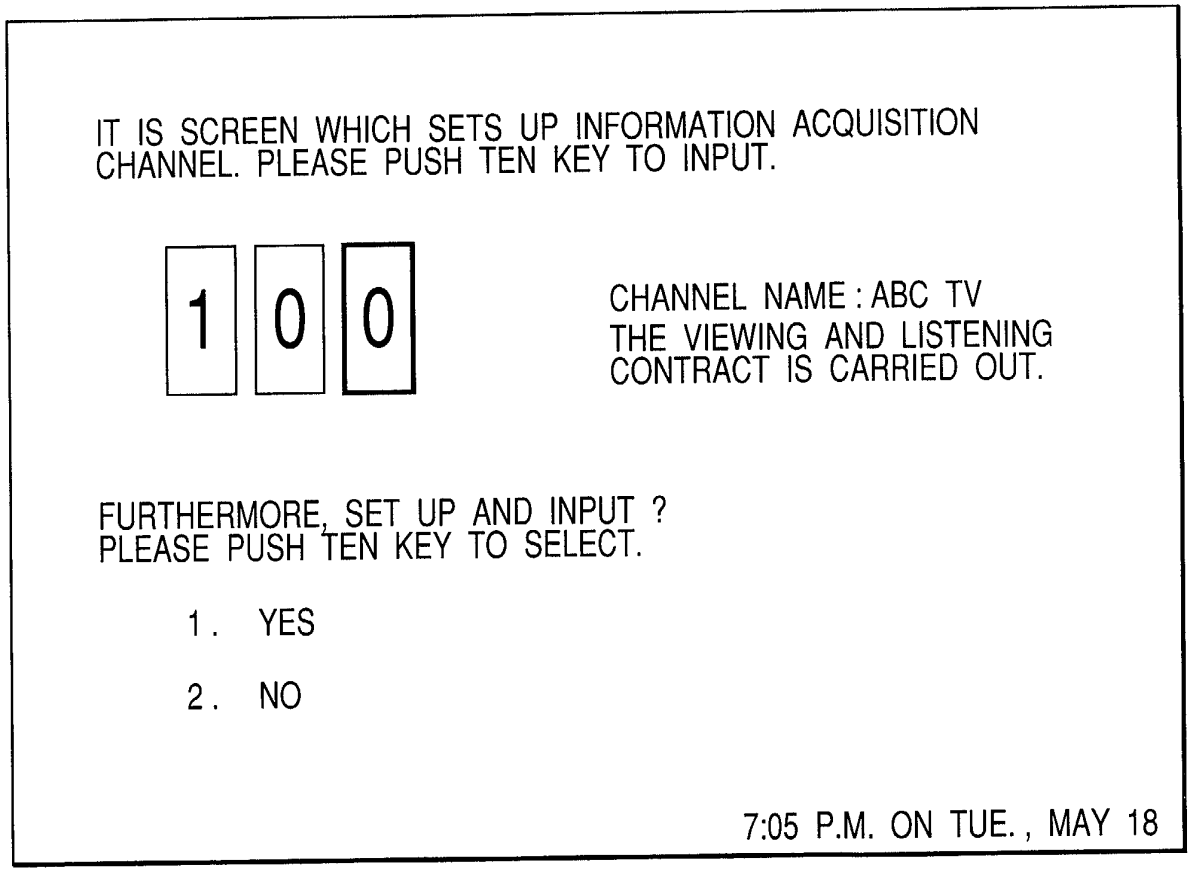
IT IS SCREEN WHICH SETS UP INFORMATION ACQUISITION CHANNEL. PLEASE PUSH TEN KEY TO INPUT.
1 0 0
CHANNEL NAME : ABC TV
THE VIEWING AND LISTENING CONTRACT IS CARRIED OUT.
FURTHERMORE, SET UP AND INPUT ?
PLEASE PUSH TEN KEY TO SELECT.
1. YES
2. NO
7:05 P.M. ON TUE., MAY 18

FIG. 6F

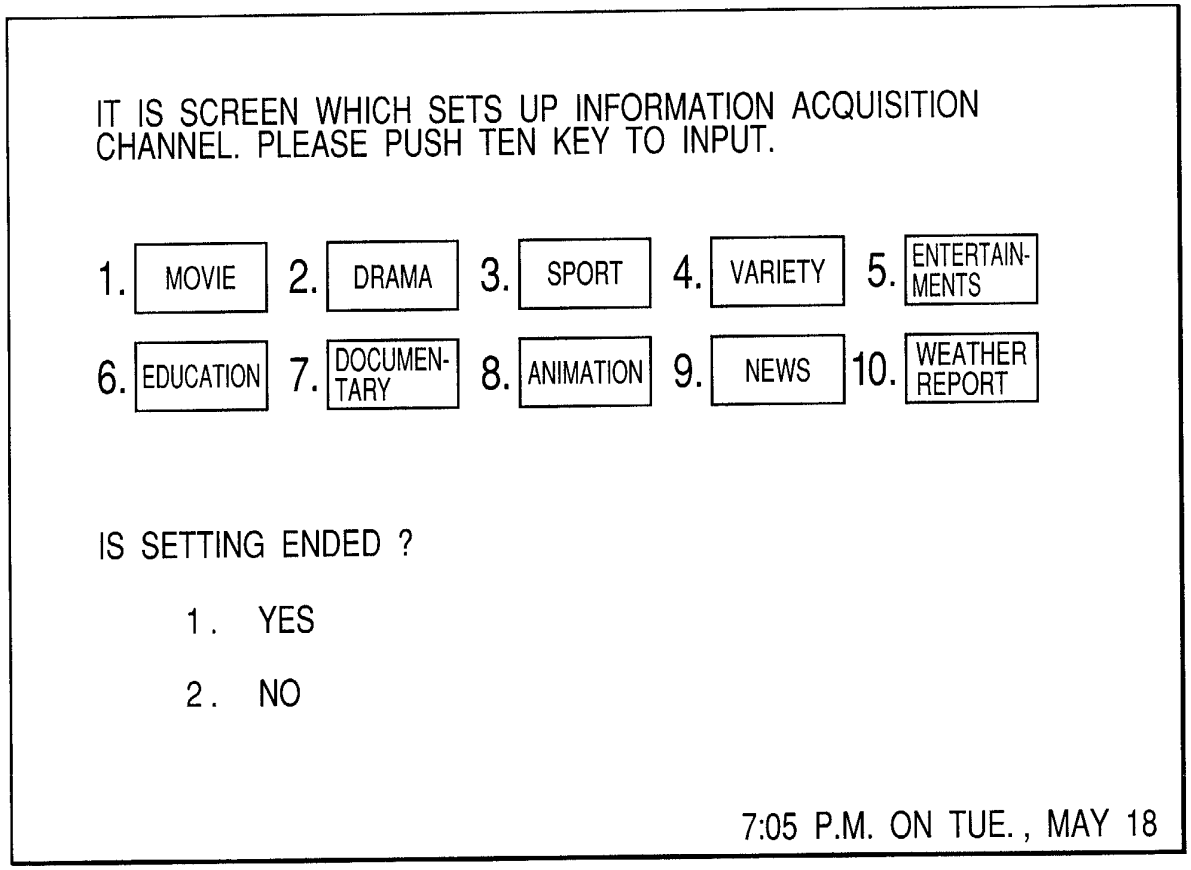
IT IS SCREEN WHICH SETS UP INFORMATION ACQUISITION CHANNEL. PLEASE PUSH TEN KEY TO INPUT.
1. MOVIE
2. DRAMA
3. SPORT
4. VARIETY
5. ENTERTAIN-MENTS
6. EDUCATION
7. DOCUMEN-TARY
8. ANIMATION
9. NEWS
10. WEATHER REPORT
IS SETTING ENDED ?
1. YES
2. NO
7:05 P.M. ON TUE., MAY 18

FIG. 7

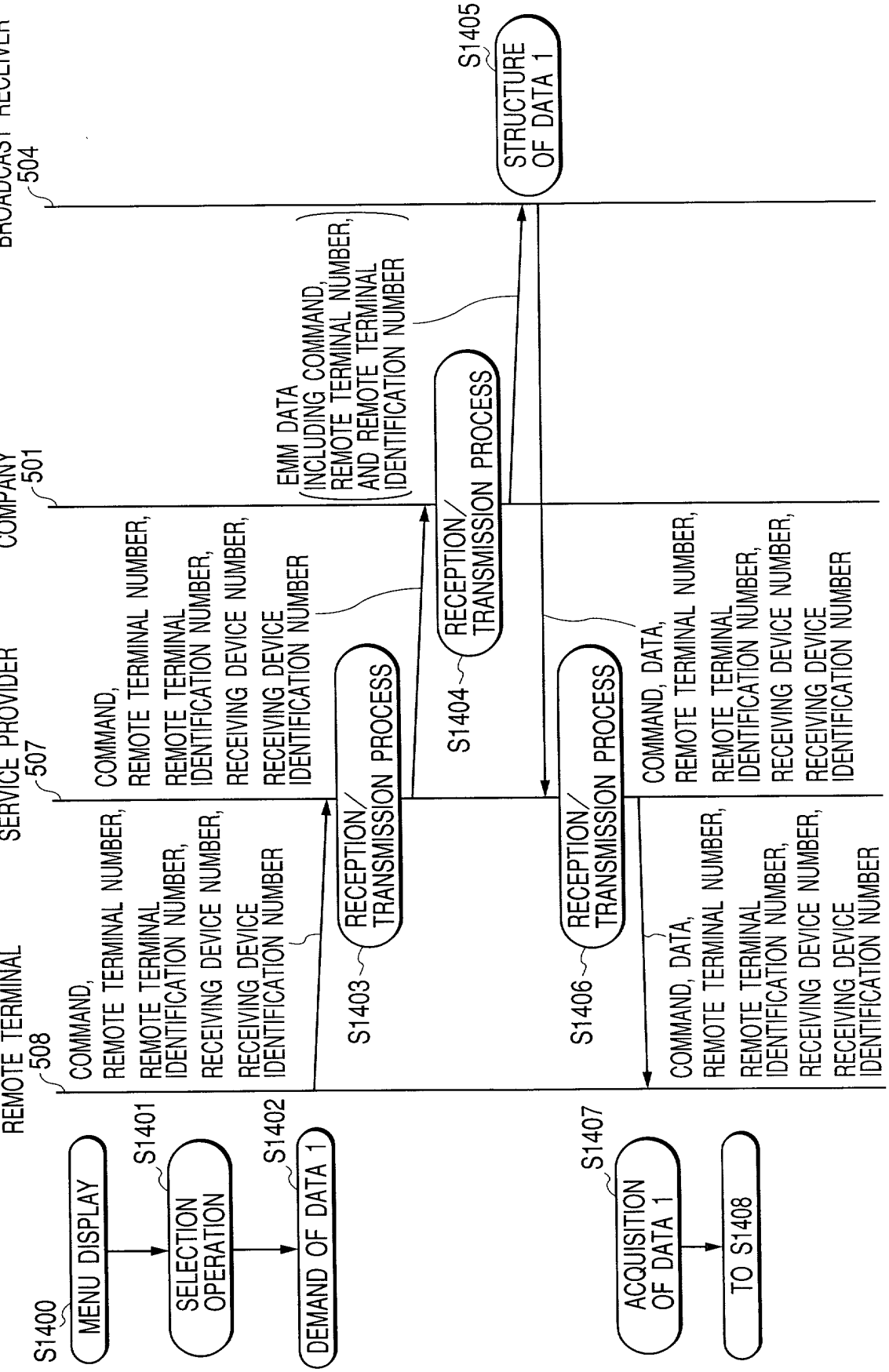
REMOTE TERMINAL
508
SERVICE PROVIDER
507
BROADCASTING INDUSTRY COMPANY
501
BROADCAST RECEIVER
504
S1400
MENU DISPLAY
S1401
SELECTION OPERATION
S1402
DEMAND OF DATA 1
COMMAND, REMOTE TERMINAL NUMBER, REMOTE TERMINAL IDENTIFICATION NUMBER, RECEIVING DEVICE NUMBER, RECEIVING DEVICE IDENTIFICATION NUMBER
S1403
RECEPTION/ TRANSMISSION PROCESS
COMMAND, REMOTE TERMINAL NUMBER, REMOTE TERMINAL IDENTIFICATION NUMBER, RECEIVING DEVICE NUMBER, RECEIVING DEVICE IDENTIFICATION NUMBER
S1404
RECEPTION/ TRANSMISSION PROCESS
EMM DATA (INCLUDING COMMAND, REMOTE TERMINAL NUMBER, AND REMOTE TERMINAL IDENTIFICATION NUMBER
S1405
STRUCTURE OF DATA 1
S1406
RECEPTION/ TRANSMISSION PROCESS
COMMAND, DATA, REMOTE TERMINAL NUMBER, REMOTE TERMINAL IDENTIFICATION NUMBER, RECEIVING DEVICE NUMBER, RECEIVING DEVICE IDENTIFICATION NUMBER
S1407
ACQUISITION OF DATA 1
TO S1408

FIG. 8

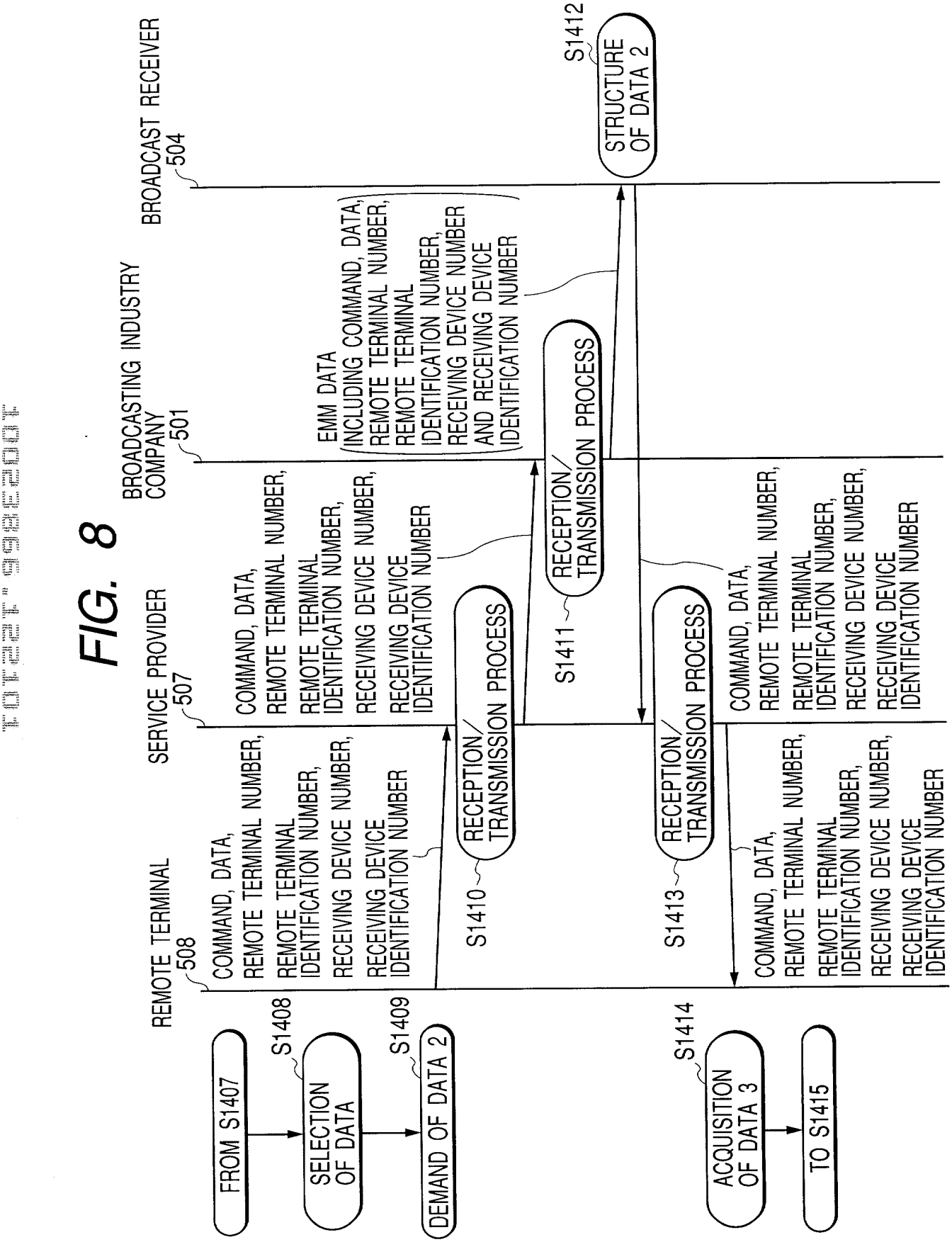
REMOTE TERMINAL
508
SERVICE PROVIDER
507
BROADCASTING INDUSTRY COMPANY
501
BROADCAST RECEIVER
504
FROM S1407
S1408
SELECTION OF DATA
S1409
DEMAND OF DATA 2
COMMAND, DATA, REMOTE TERMINAL NUMBER, REMOTE TERMINAL IDENTIFICATION NUMBER, RECEIVING DEVICE NUMBER, RECEIVING DEVICE IDENTIFICATION NUMBER
S1410
RECEPTION/ TRANSMISSION PROCESS
COMMAND, DATA, REMOTE TERMINAL NUMBER, REMOTE TERMINAL IDENTIFICATION NUMBER, RECEIVING DEVICE NUMBER, RECEIVING DEVICE IDENTIFICATION NUMBER
S1411
RECEPTION/ TRANSMISSION PROCESS
EMM DATA (INCLUDING COMMAND, DATA, REMOTE TERMINAL NUMBER, REMOTE TERMINAL IDENTIFICATION NUMBER, RECEIVING DEVICE NUMBER AND RECEIVING DEVICE IDENTIFICATION NUMBER
S1412
STRUCTURE OF DATA 2
S1413
RECEPTION/ TRANSMISSION PROCESS
COMMAND, DATA, REMOTE TERMINAL NUMBER, REMOTE TERMINAL IDENTIFICATION NUMBER, RECEIVING DEVICE NUMBER, RECEIVING DEVICE IDENTIFICATION NUMBER
COMMAND, DATA, REMOTE TERMINAL NUMBER, REMOTE TERMINAL IDENTIFICATION NUMBER, RECEIVING DEVICE NUMBER, RECEIVING DEVICE IDENTIFICATION NUMBER
S1414
ACQUISITION OF DATA 3
TO S1415

FIG. 9

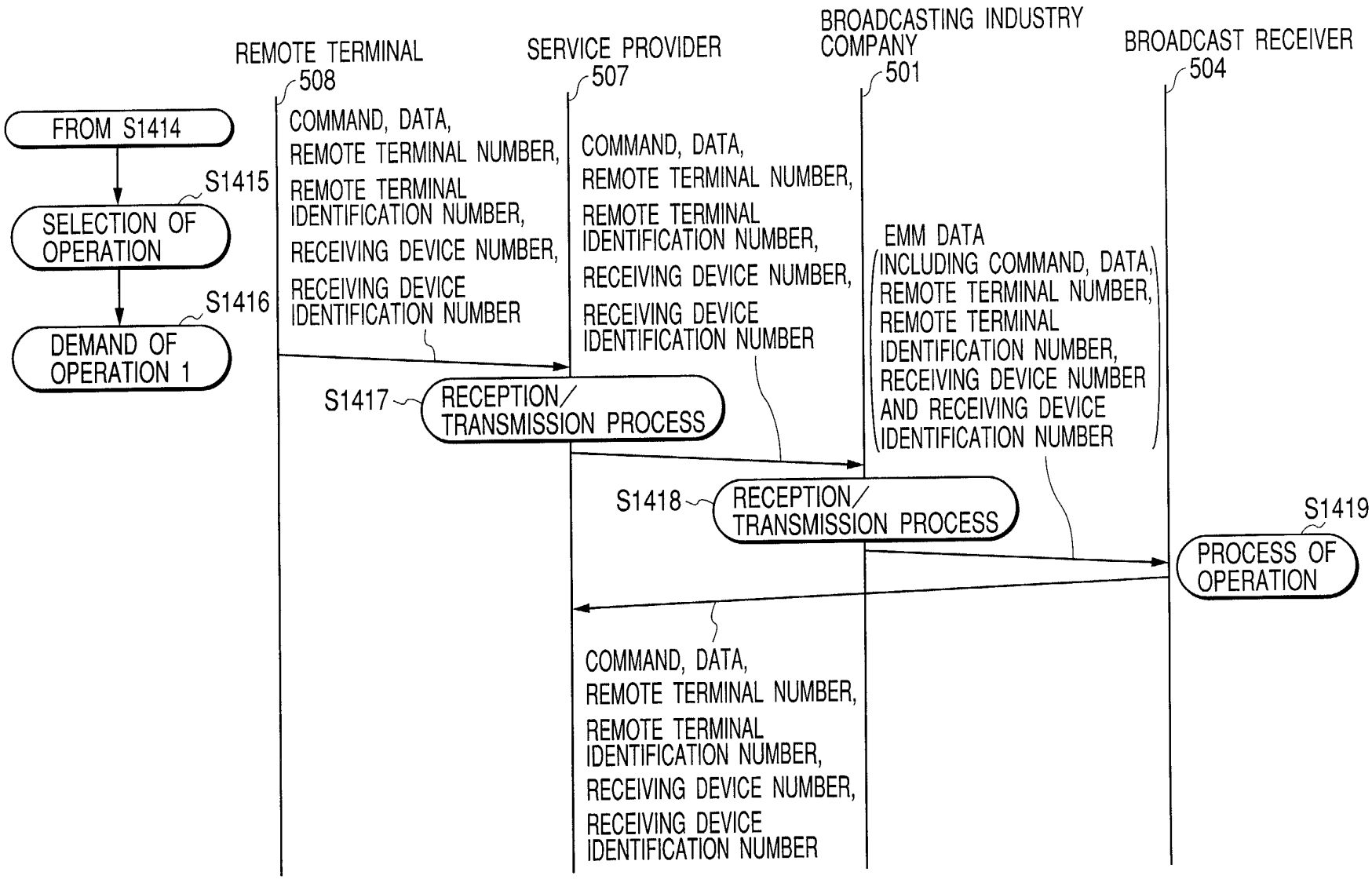
REMOTE TERMINAL
508
SERVICE PROVIDER
507
BROADCASTING INDUSTRY COMPANY
501
BROADCAST RECEIVER
504
FROM S1414
S1415
SELECTION OF OPERATION
S1416
DEMAND OF OPERATION 1
COMMAND, DATA, REMOTE TERMINAL NUMBER, REMOTE TERMINAL IDENTIFICATION NUMBER, RECEIVING DEVICE NUMBER, RECEIVING DEVICE IDENTIFICATION NUMBER
COMMAND, DATA, REMOTE TERMINAL NUMBER, REMOTE TERMINAL IDENTIFICATION NUMBER, RECEIVING DEVICE NUMBER, RECEIVING DEVICE IDENTIFICATION NUMBER
EMM DATA (INCLUDING COMMAND, DATA, REMOTE TERMINAL NUMBER, REMOTE TERMINAL IDENTIFICATION NUMBER, RECEIVING DEVICE NUMBER AND RECEIVING DEVICE IDENTIFICATION NUMBER
S1417
RECEPTION/ TRANSMISSION PROCESS
S1418
RECEPTION/ TRANSMISSION PROCESS
S1419
PROCESS OF OPERATION
COMMAND, DATA, REMOTE TERMINAL NUMBER, REMOTE TERMINAL IDENTIFICATION NUMBER, RECEIVING DEVICE NUMBER, RECEIVING DEVICE IDENTIFICATION NUMBER

FIG. 10

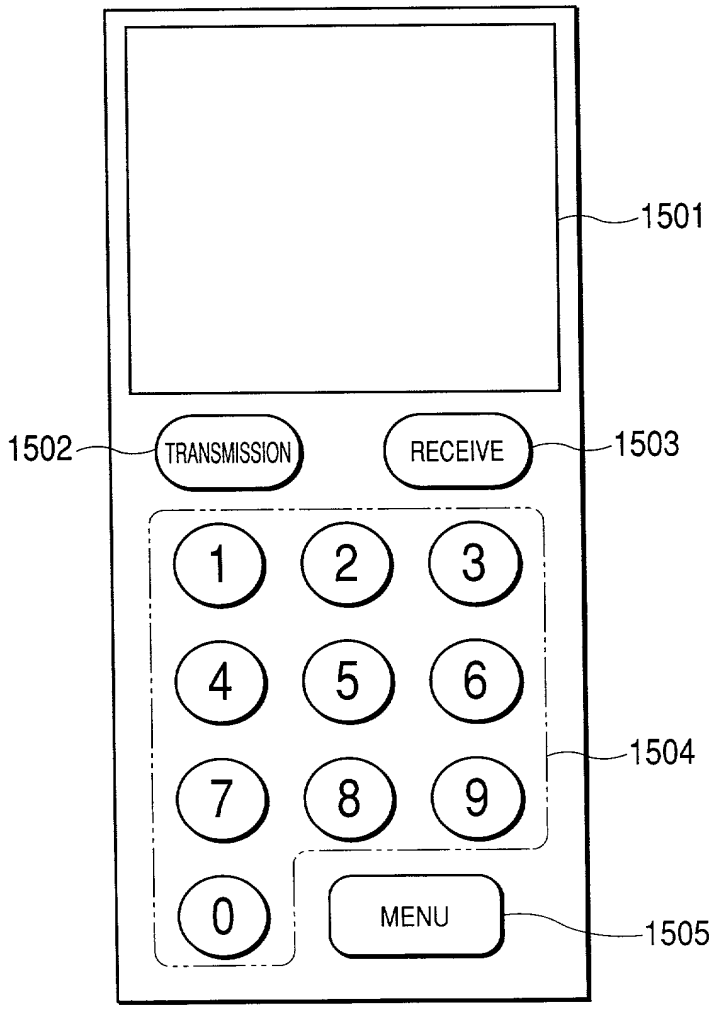
1501
1502
TRANSMISSION
RECEIVE
1503
1
2
3
4
5
6
7
8
9
1504
0
MENU
1505

FIG. 11

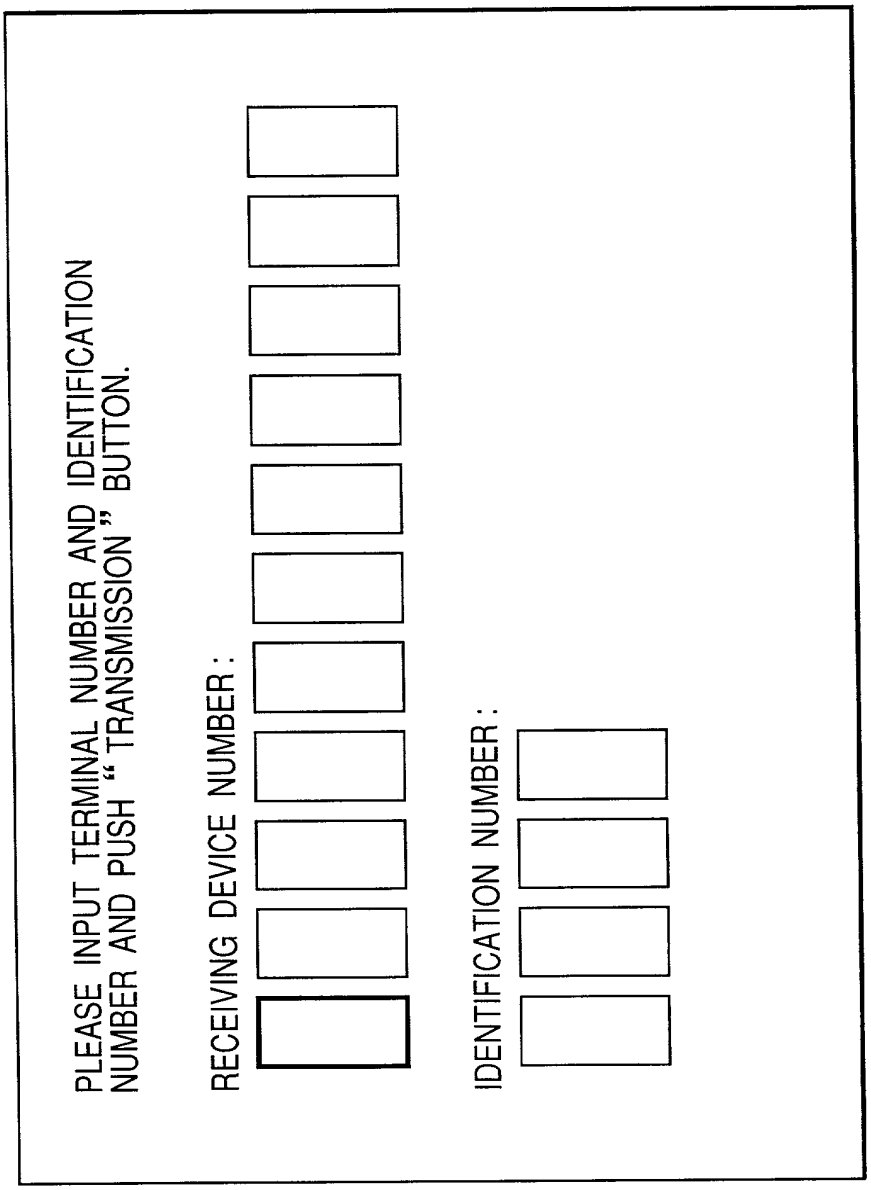
PLEASE INPUT TERMINAL NUMBER AND IDENTIFICATION NUMBER AND PUSH "TRANSMISSION" BUTTON.
RECEIVING DEVICE NUMBER :
IDENTIFICATION NUMBER :

FIG. 12

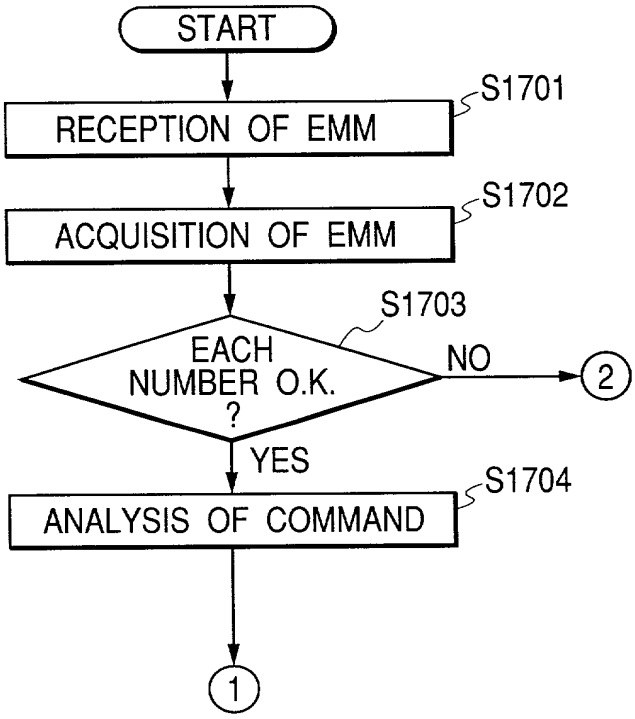

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FIG. 13

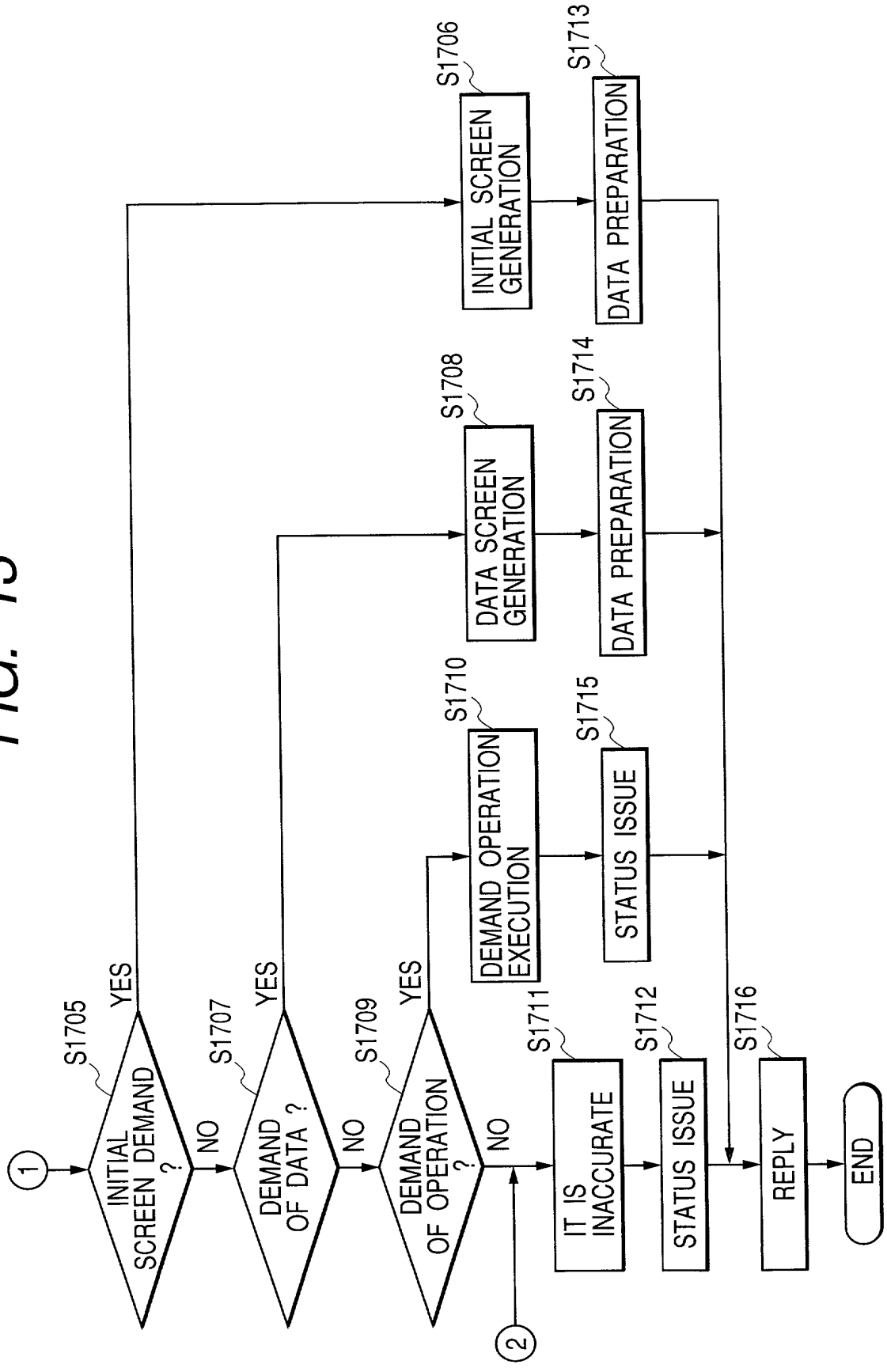

1
INITIAL SCREEN DEMAND ?
S1705
YES
NO
DEMAND OF DATA ?
S1707
YES
NO
DEMAND OF OPERATION ?
S1709
YES
NO
2
INITIAL SCREEN GENERATION
S1706
DATA PREPARATION
S1713
DATA SCREEN GENERATION
S1708
DATA PREPARATION
S1714
DEMAND OPERATION EXECUTION
S1710
STATUS ISSUE
S1715
IT IS INACCURATE
S1711
STATUS ISSUE
S1712
REPLY
S1716
END

FIG. 14A

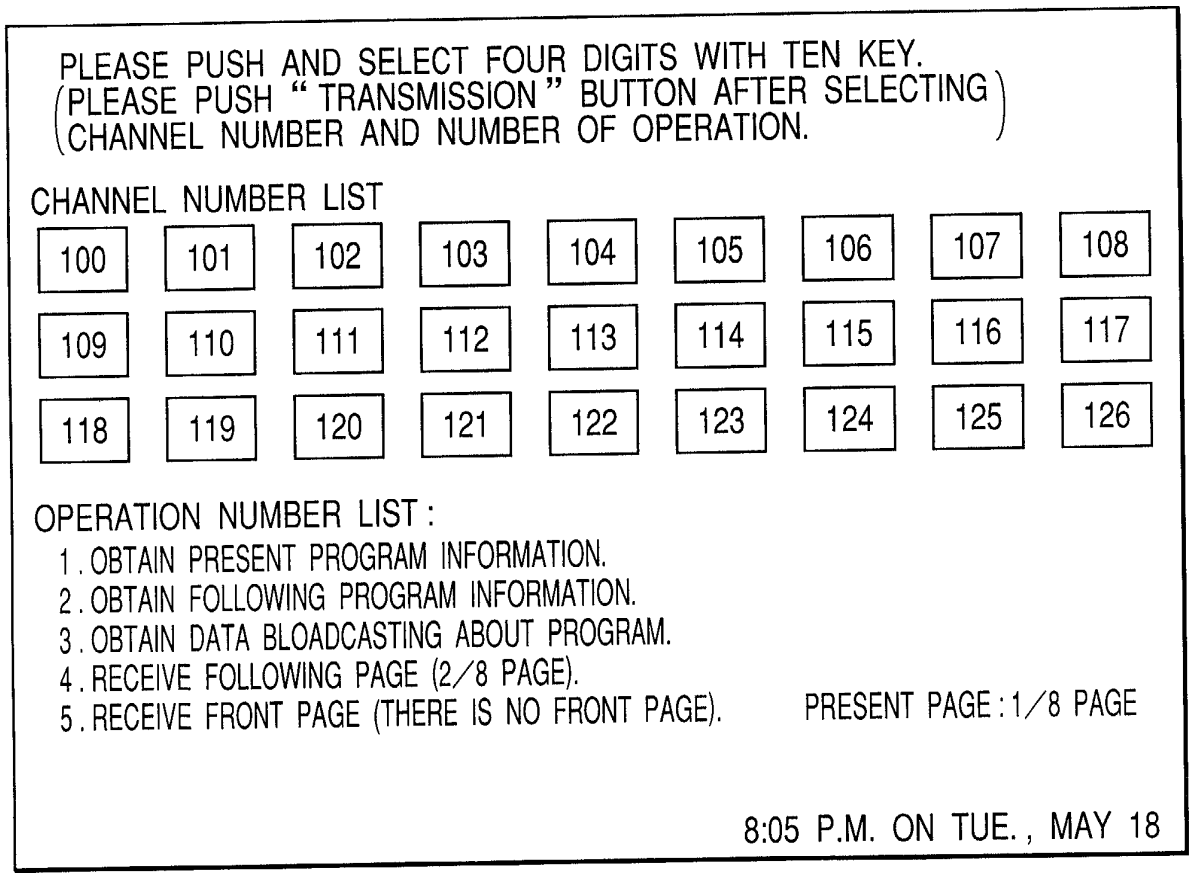

PLEASE PUSH AND SELECT FOUR DIGITS WITH TEN KEY.
(PLEASE PUSH " TRANSMISSION " BUTTON AFTER SELECTING CHANNEL NUMBER AND NUMBER OF OPERATION.)
CHANNEL NUMBER LIST
100 101 102 103 104 105 106 107 108
109 110 111 112 113 114 115 116 117
118 119 120 121 122 123 124 125 126
OPERATION NUMBER LIST :
1. OBTAIN PRESENT PROGRAM INFORMATION.
2. OBTAIN FOLLOWING PROGRAM INFORMATION.
3. OBTAIN DATA BLOADCASTING ABOUT PROGRAM.
4. RECEIVE FOLLOWING PAGE (2/8 PAGE).
5. RECEIVE FRONT PAGE (THERE IS NO FRONT PAGE).
PRESENT PAGE : 1/8 PAGE
8:05 P.M. ON TUE., MAY 18

FIG. 14B

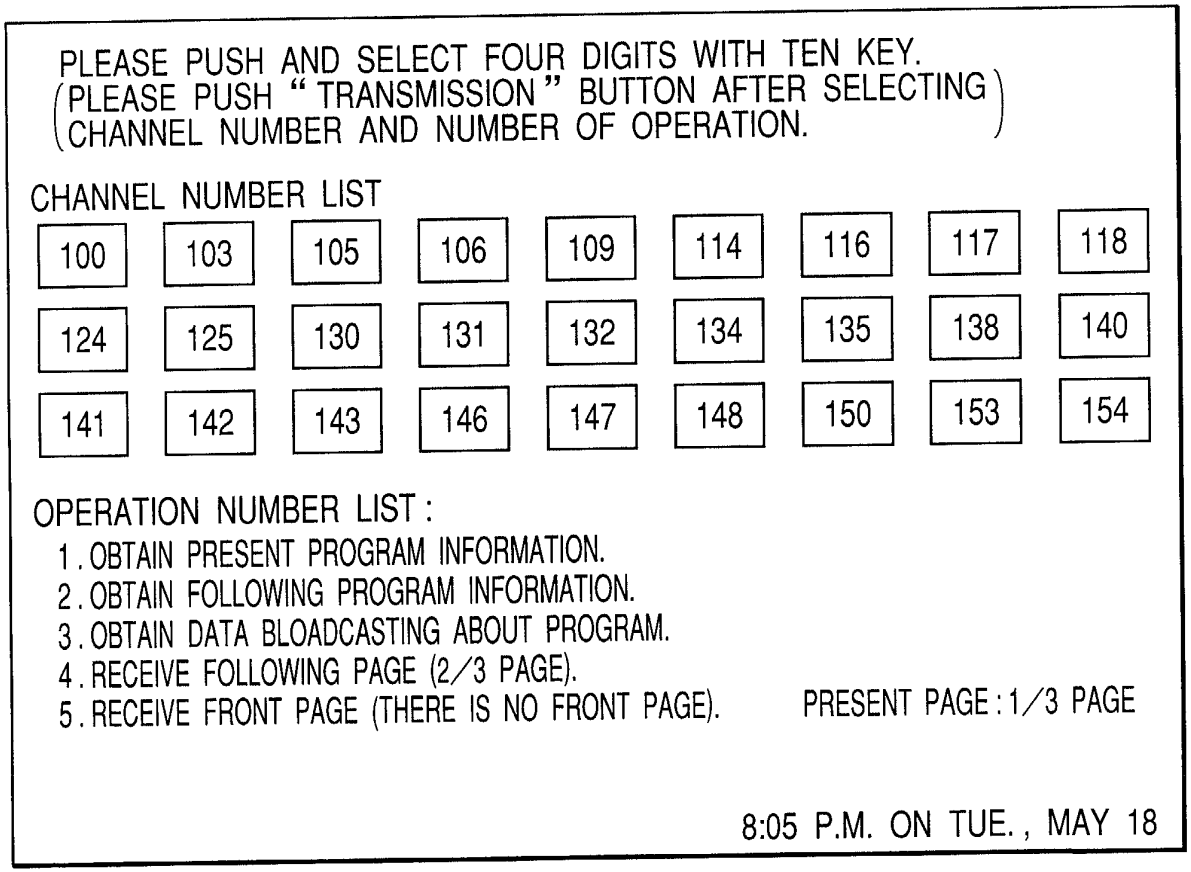

PLEASE PUSH AND SELECT FOUR DIGITS WITH TEN KEY.
(PLEASE PUSH " TRANSMISSION " BUTTON AFTER SELECTING CHANNEL NUMBER AND NUMBER OF OPERATION.)
CHANNEL NUMBER LIST
100 103 105 106 109 114 116 117 118
124 125 130 131 132 134 135 138 140
141 142 143 146 147 148 150 153 154
OPERATION NUMBER LIST :
1. OBTAIN PRESENT PROGRAM INFORMATION.
2. OBTAIN FOLLOWING PROGRAM INFORMATION.
3. OBTAIN DATA BLOADCASTING ABOUT PROGRAM.
4. RECEIVE FOLLOWING PAGE (2/3 PAGE).
5. RECEIVE FRONT PAGE (THERE IS NO FRONT PAGE).
PRESENT PAGE : 1/3 PAGE
8:05 P.M. ON TUE., MAY 18

FIG. 14C

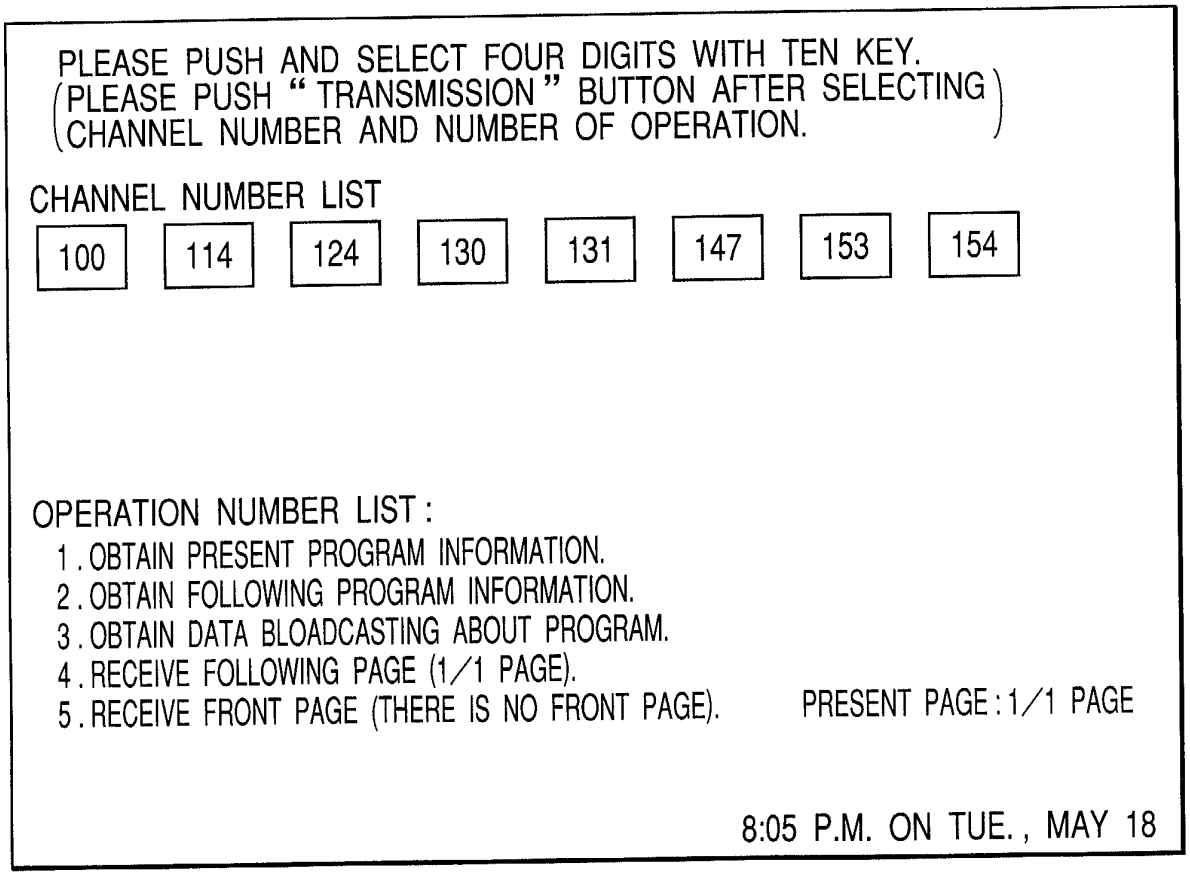

PLEASE PUSH AND SELECT FOUR DIGITS WITH TEN KEY.
(PLEASE PUSH " TRANSMISSION " BUTTON AFTER SELECTING CHANNEL NUMBER AND NUMBER OF OPERATION.)
CHANNEL NUMBER LIST
100
114
124
130
131
147
153
154
OPERATION NUMBER LIST :
1 . OBTAIN PRESENT PROGRAM INFORMATION.
2 . OBTAIN FOLLOWING PROGRAM INFORMATION.
3 . OBTAIN DATA BLOADCASTING ABOUT PROGRAM.
4 . RECEIVE FOLLOWING PAGE (1/1 PAGE).
5 . RECEIVE FRONT PAGE (THERE IS NO FRONT PAGE).
PRESENT PAGE : 1/1 PAGE
8:05 P.M. ON TUE., MAY 18

FIG. 15

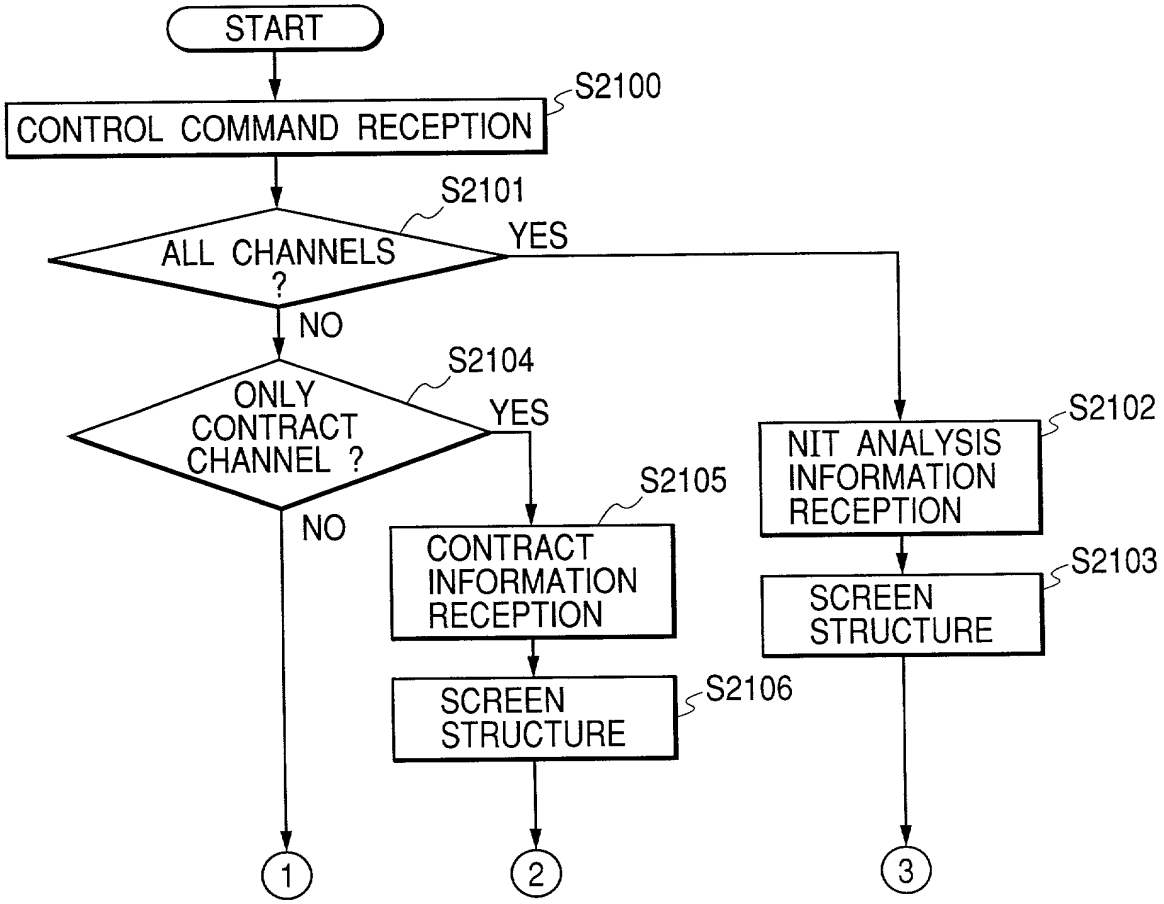

START
CONTROL COMMAND RECEPTION
S2100
S2101
ALL CHANNELS ?
YES
NO
S2104
ONLY CONTRACT CHANNEL ?
YES
NO
S2102
NIT ANALYSIS INFORMATION RECEPTION
S2103
SCREEN STRUCTURE
S2105
CONTRACT INFORMATION RECEPTION
S2106
SCREEN STRUCTURE
1
2
3

FIG. 16

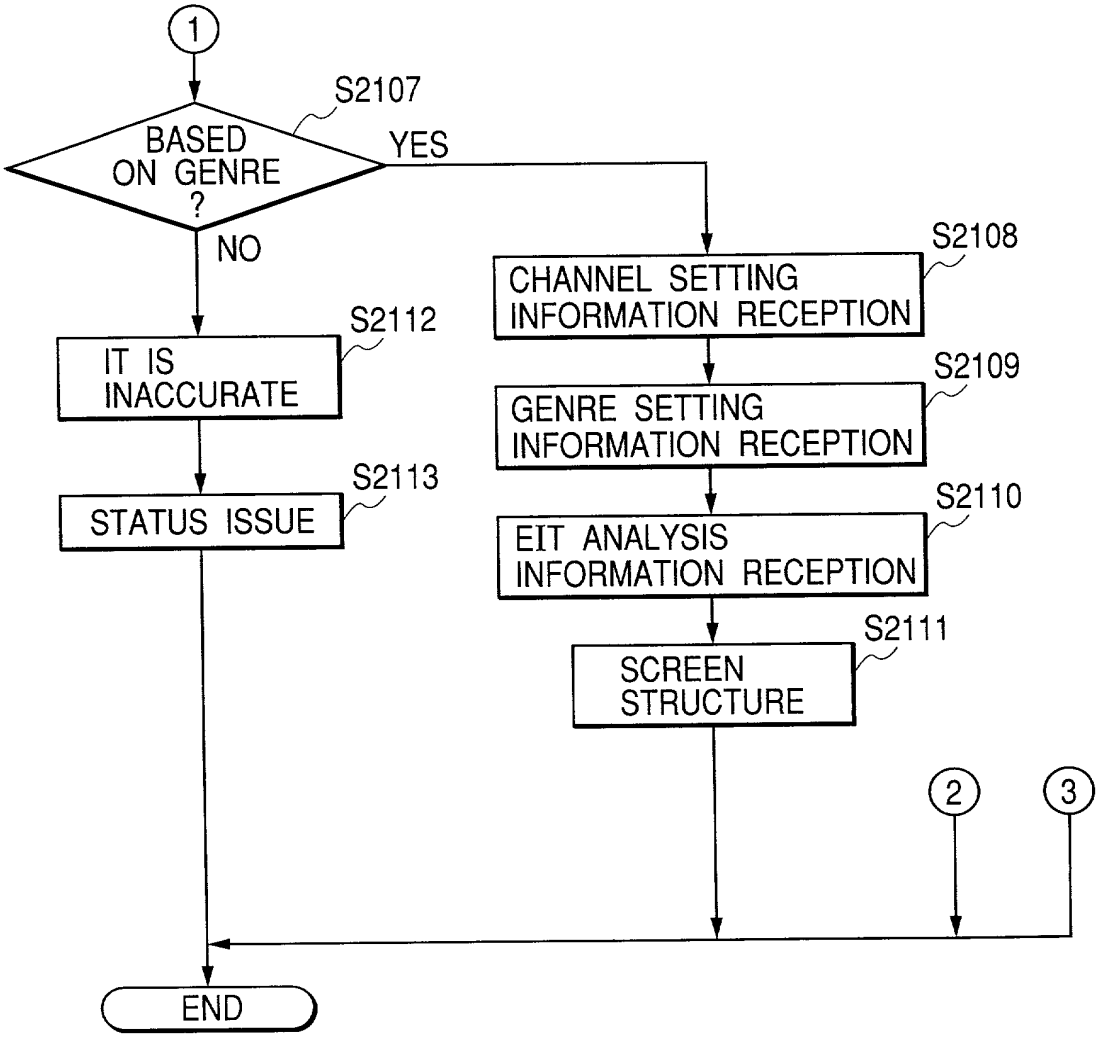

1
S2107
BASED ON GENRE ?
YES
NO
S2108
CHANNEL SETTING INFORMATION RECEPTION
S2109
GENRE SETTING INFORMATION RECEPTION
S2110
EIT ANALYSIS INFORMATION RECEPTION
S2111
SCREEN STRUCTURE
S2112
IT IS INACCURATE
S2113
STATUS ISSUE
2
3
END

FIG. 17A

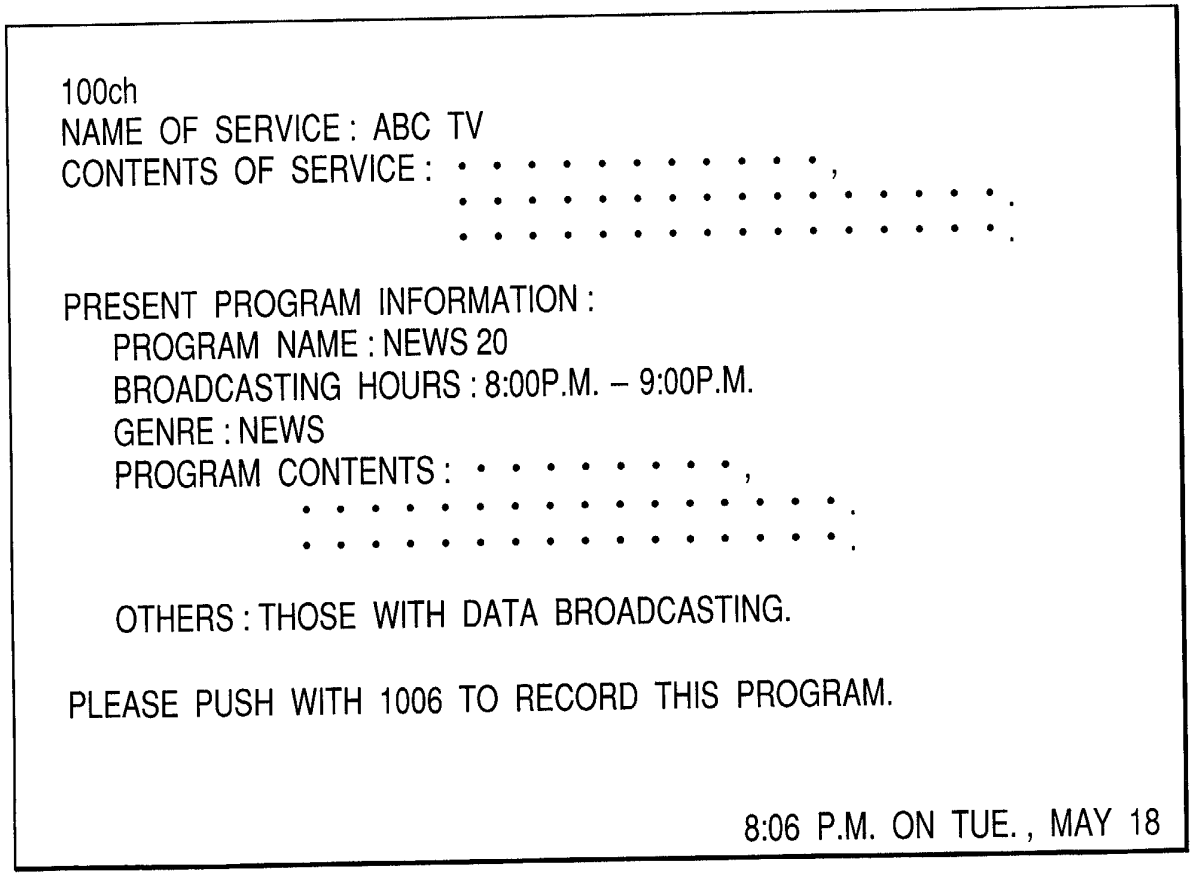
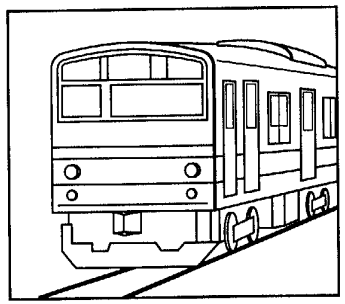

100ch
NAME OF SERVICE : ABC TV
CONTENTS OF SERVICE : • • •

FIG. 17B

100ch
NAME OF SERVICE : ABC TV
IT IS PROGRAM LINKAGE TYPE DATA BROADCASTING

TRAFFIC INFORMATION



STATUS OF 8:00 P.M. ON MAY 18

· SAGAMI RAILWAY LINE
THERE IS ESPECIALLY NO INFORMATION ON DELAY.

· TOKYU TOYOKO LINE
THERE IS ESPECIALLY NO INFORMATION ON DELAY.

PLEASE PUSH WITH 1007 TO RECORD THIS PROGRAM.

8:05 P.M. ON TUE., MAY 18

FIG. 18

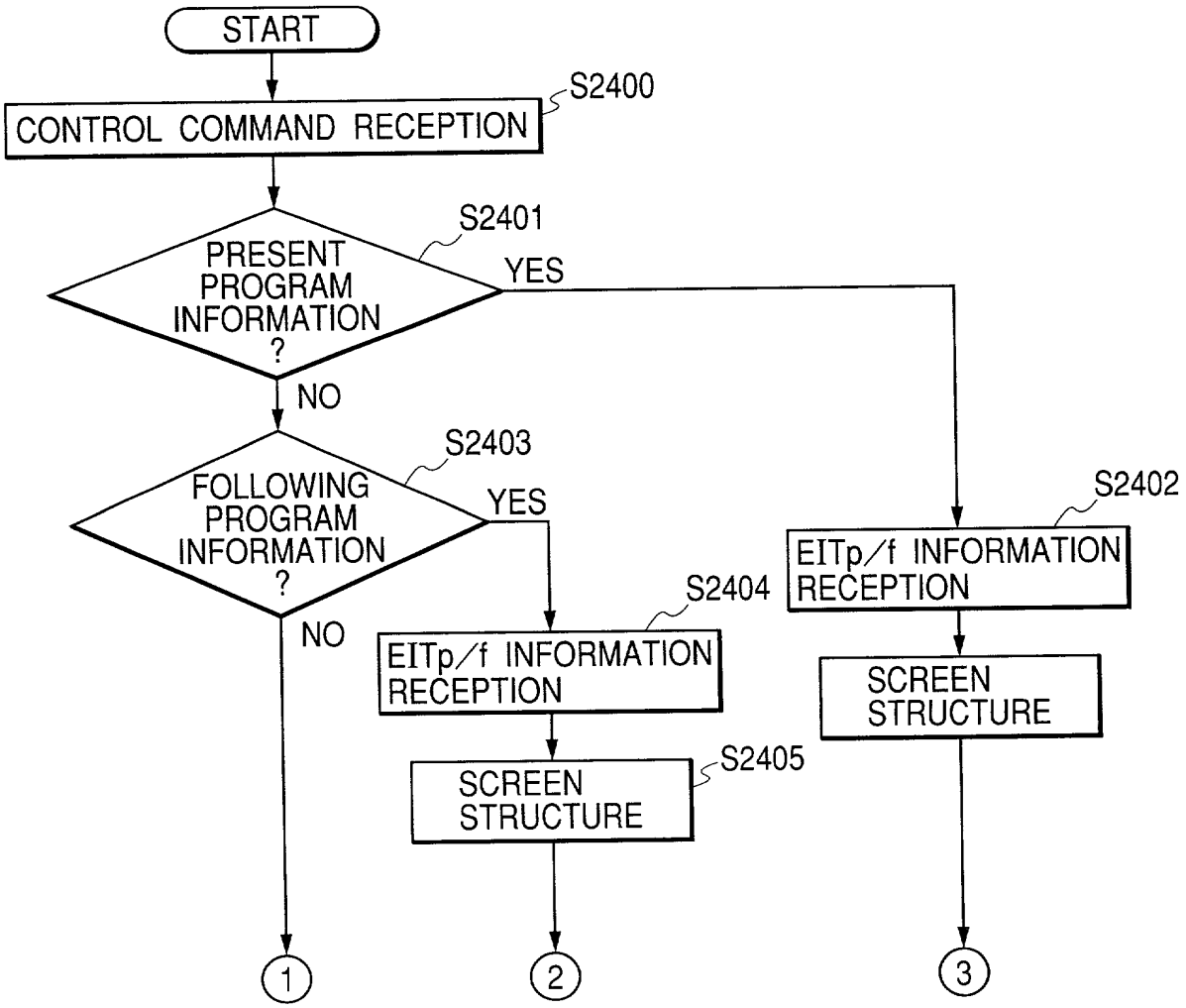

START
CONTROL COMMAND RECEPTION
S2400
PRESENT PROGRAM INFORMATION ?
S2401
YES
NO
FOLLOWING PROGRAM INFORMATION ?
S2403
YES
NO
EITp/f INFORMATION RECEPTION
S2404
SCREEN STRUCTURE
S2405
EITp/f INFORMATION RECEPTION
S2402
SCREEN STRUCTURE
1
2
3

FIG. 19

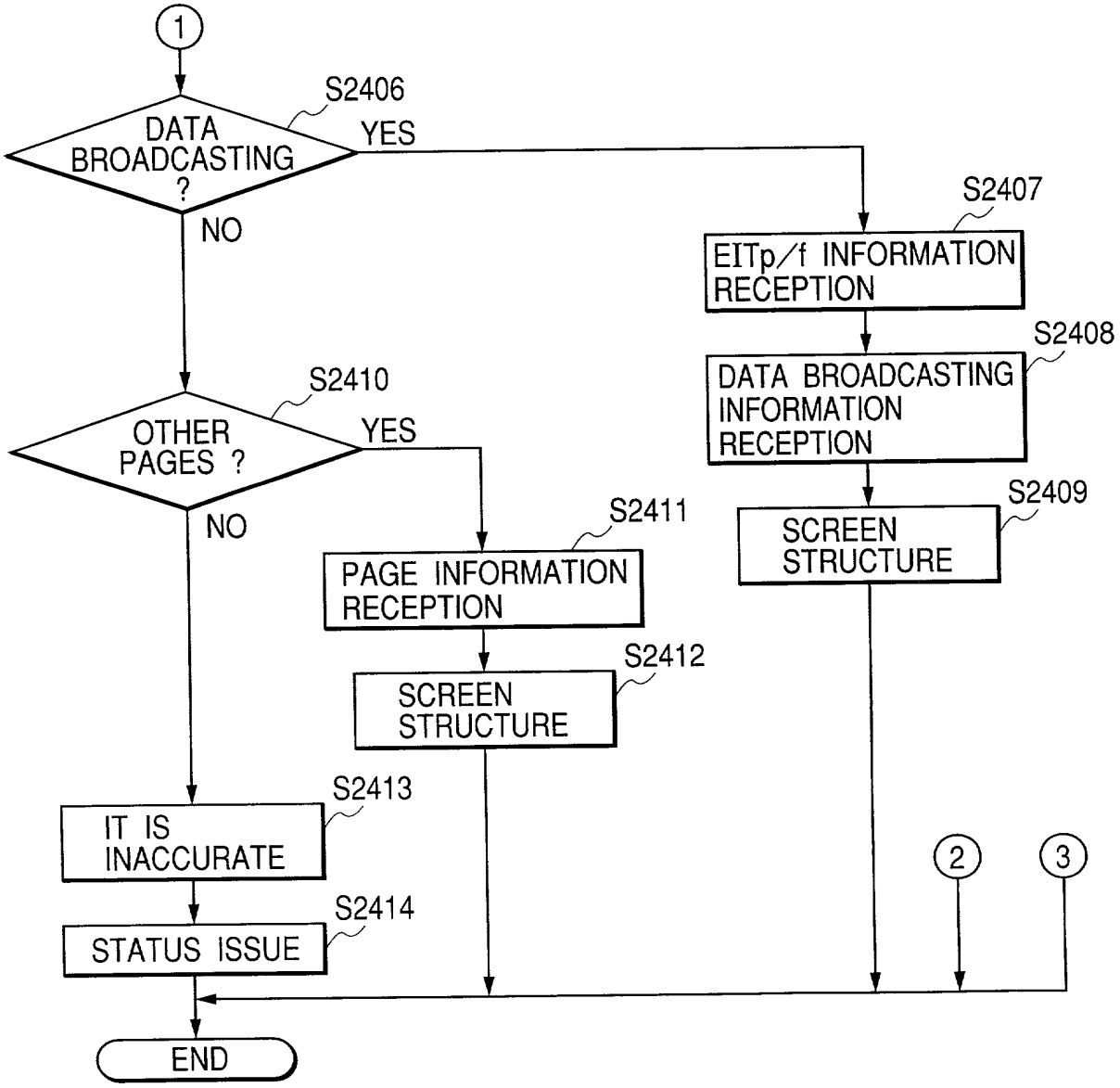

1
S2406
DATA BROADCASTING ?
YES
NO
S2407
EITp/f INFORMATION RECEPTION
S2408
DATA BROADCASTING INFORMATION RECEPTION
S2409
SCREEN STRUCTURE
S2410
OTHER PAGES ?
YES
NO
S2411
PAGE INFORMATION RECEPTION
S2412
SCREEN STRUCTURE
S2413
IT IS INACCURATE
S2414
STATUS ISSUE
2
3
END

FIG. 20

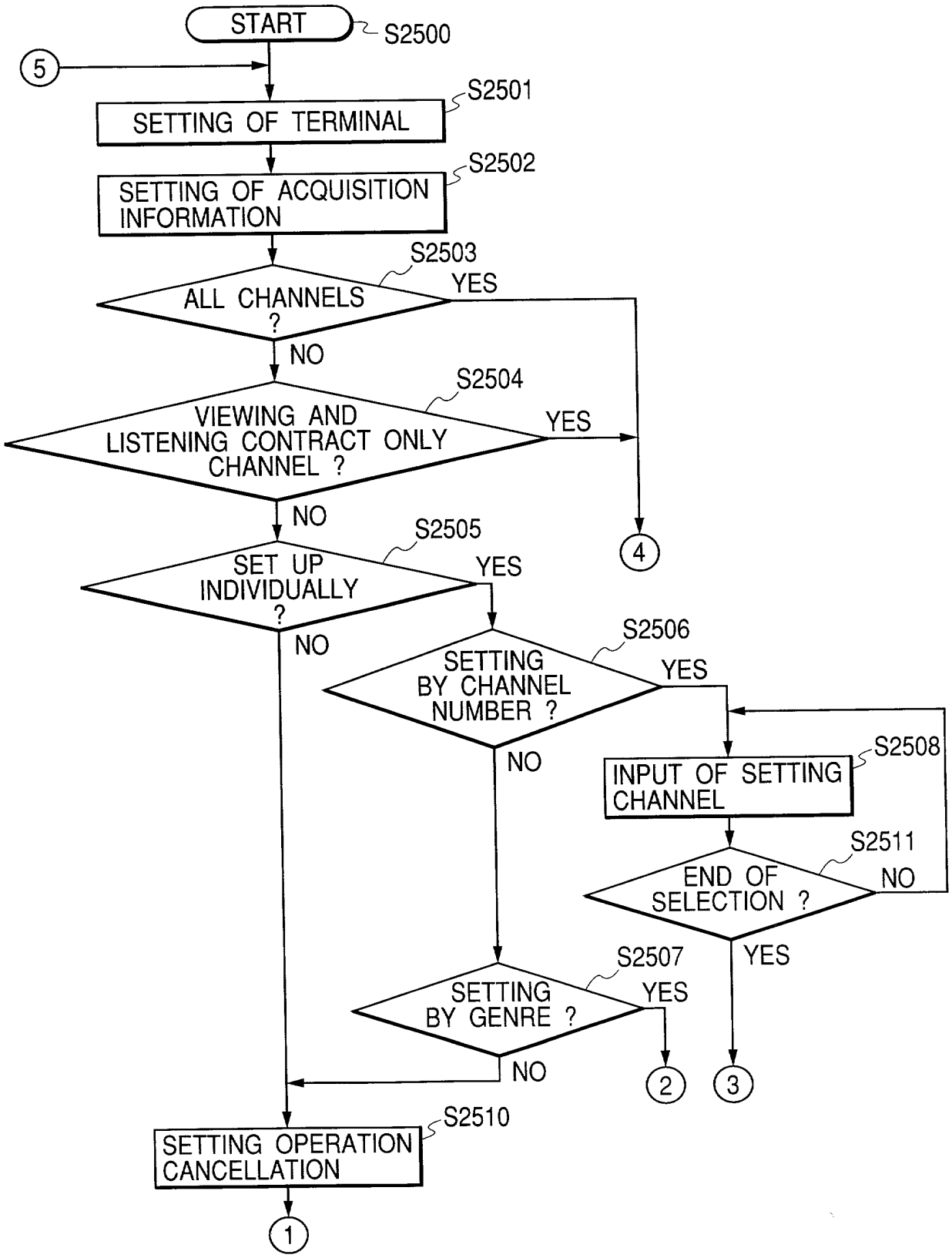

START
S2500
5
S2501
SETTING OF TERMINAL
S2502
SETTING OF ACQUISITION INFORMATION
S2503
ALL CHANNELS ?
YES
NO
S2504
VIEWING AND LISTENING CONTRACT ONLY CHANNEL ?
YES
NO
4
S2505
SET UP INDIVIDUALLY ?
YES
NO
S2506
SETTING BY CHANNEL NUMBER ?
YES
NO
S2508
INPUT OF SETTING CHANNEL
S2511
END OF SELECTION ?
NO
YES
S2507
SETTING BY GENRE ?
YES
NO
2
3
S2510
SETTING OPERATION CANCELLATION
1

FIG. 21

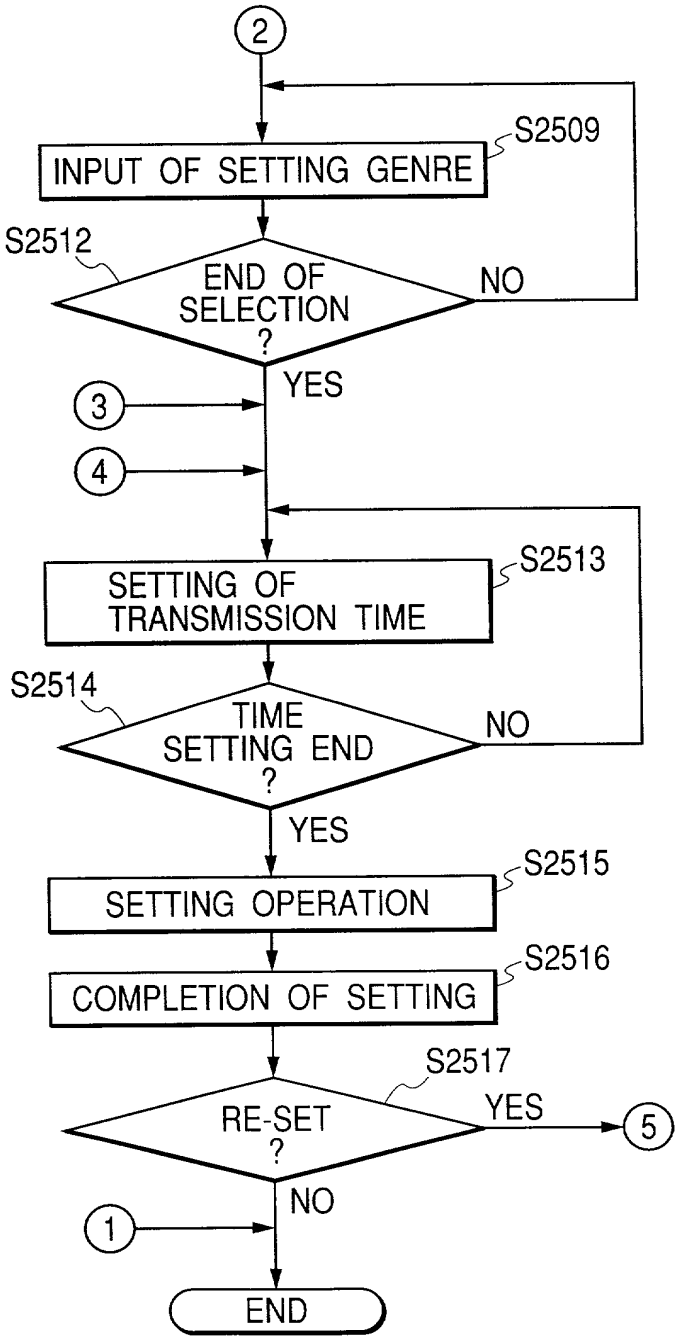

2
INPUT OF SETTING GENRE
S2509
S2512
END OF SELECTION ?
NO
YES
3
4
SETTING OF TRANSMISSION TIME
S2513
S2514
TIME SETTING END ?
NO
YES
SETTING OPERATION
S2515
COMPLETION OF SETTING
S2516
S2517
RE-SET ?
YES
5
NO
1
END

FIG. 22

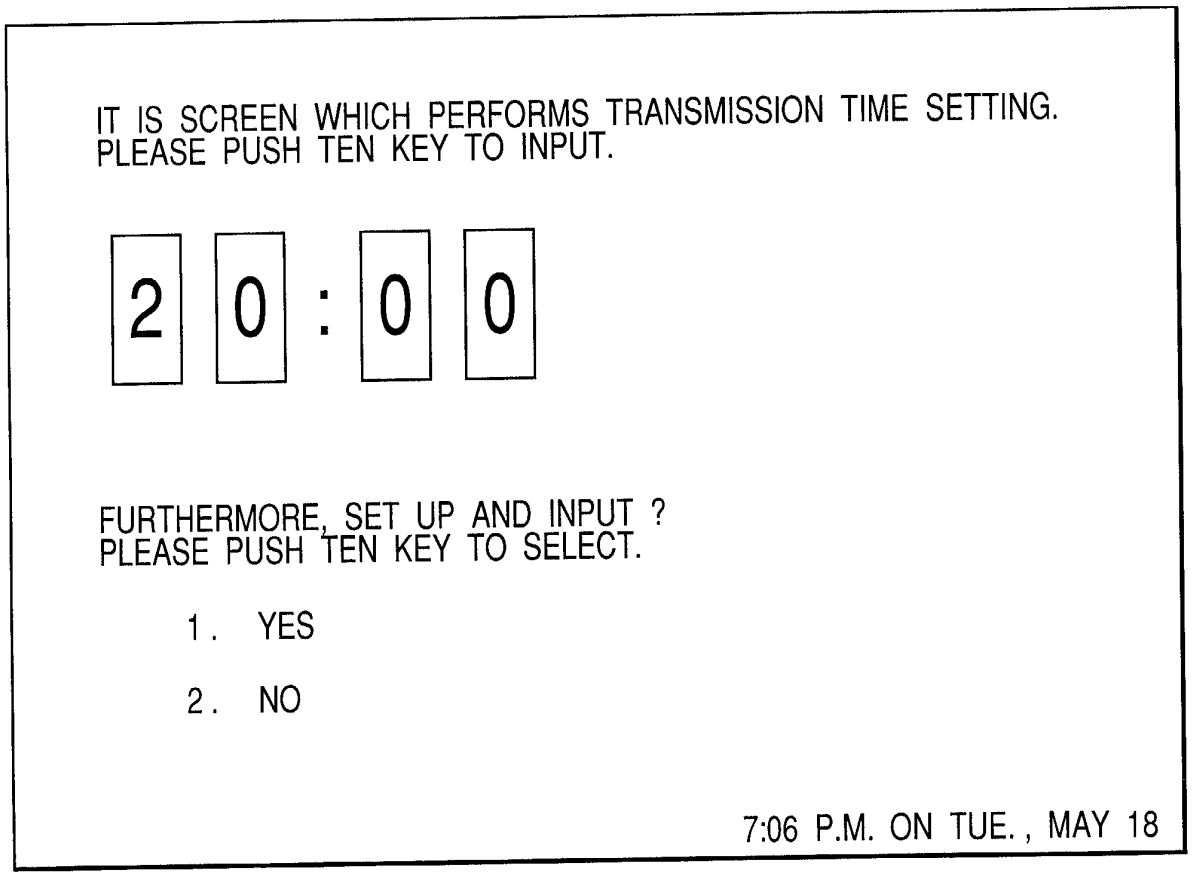

IT IS SCREEN WHICH PERFORMS TRANSMISSION TIME SETTING.
PLEASE PUSH TEN KEY TO INPUT.
2 0 : 0 0
FURTHERMORE, SET UP AND INPUT ?
PLEASE PUSH TEN KEY TO SELECT.
1. YES
2. NO
7:06 P.M. ON TUE., MAY 18

FIG. 23

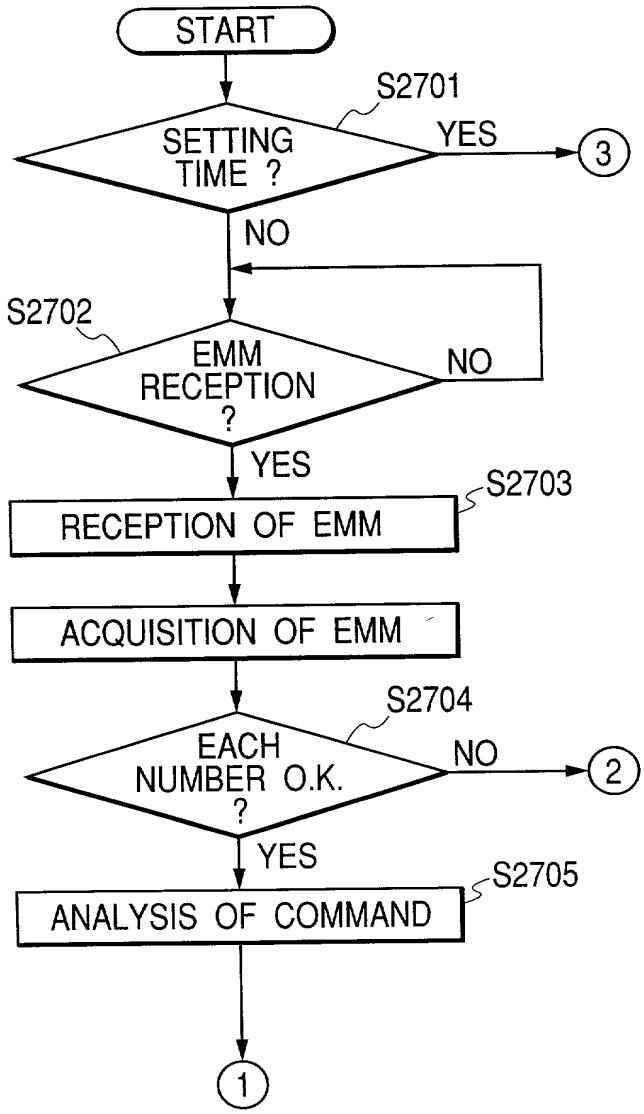

START
S2701
SETTING TIME ?
YES
3
NO
S2702
EMM RECEPTION ?
NO
YES
S2703
RECEPTION OF EMM
ACQUISITION OF EMM
S2704
EACH NUMBER O.K. ?
NO
2
YES
S2705
ANALYSIS OF COMMAND
1

FIG. 24

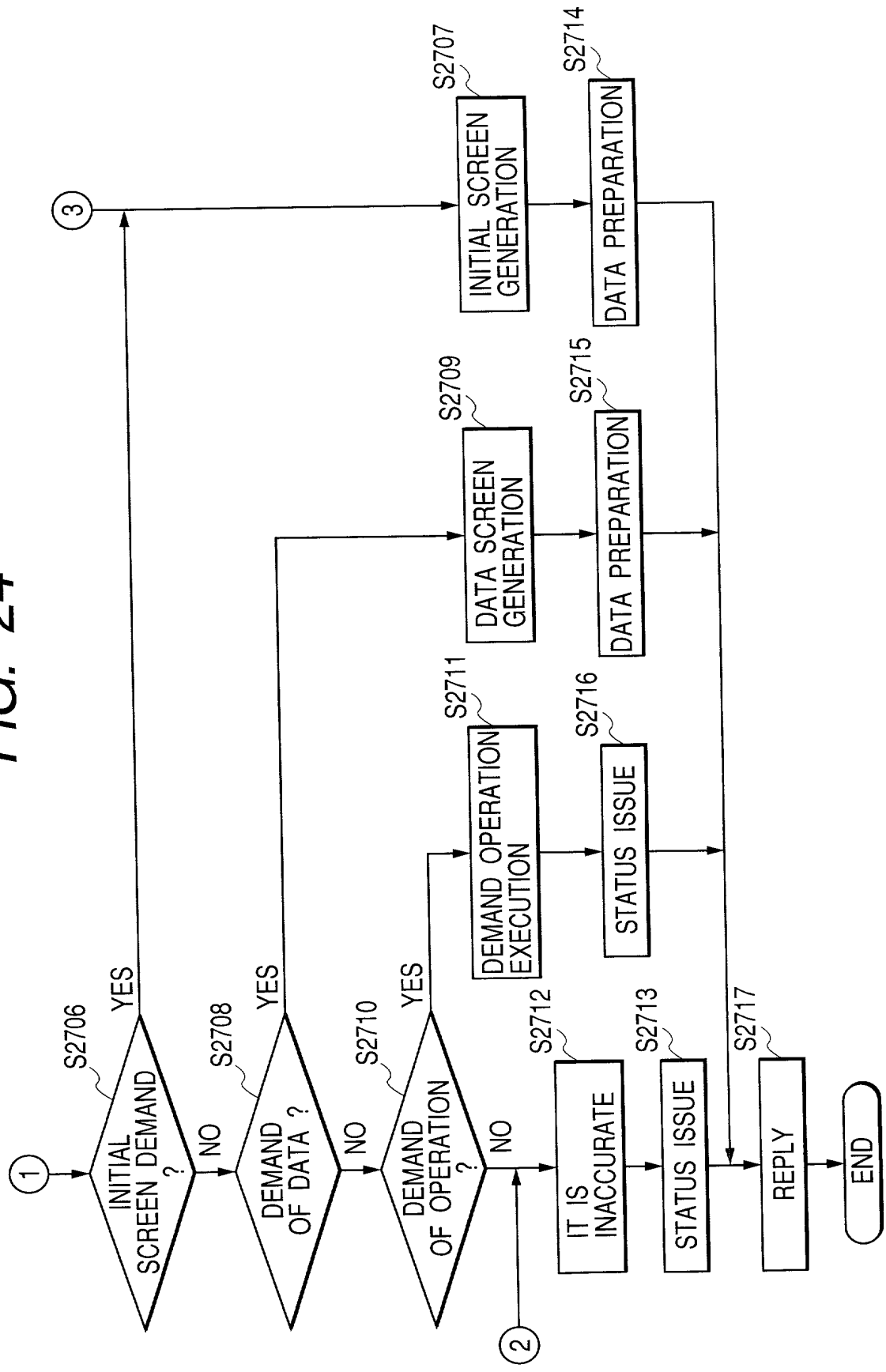

1
INITIAL SCREEN DEMAND ?
S2706
YES
NO
DEMAND OF DATA ?
S2708
YES
NO
DEMAND OF OPERATION ?
S2710
YES
NO
2
IT IS INACCURATE
S2712
STATUS ISSUE
S2713
REPLY
S2717
END
3
INITIAL SCREEN GENERATION
S2707
DATA PREPARATION
S2714
DATA SCREEN GENERATION
S2709
DATA PREPARATION
S2715
DEMAND OPERATION EXECUTION
S2711
STATUS ISSUE
S2716

FIG. 25

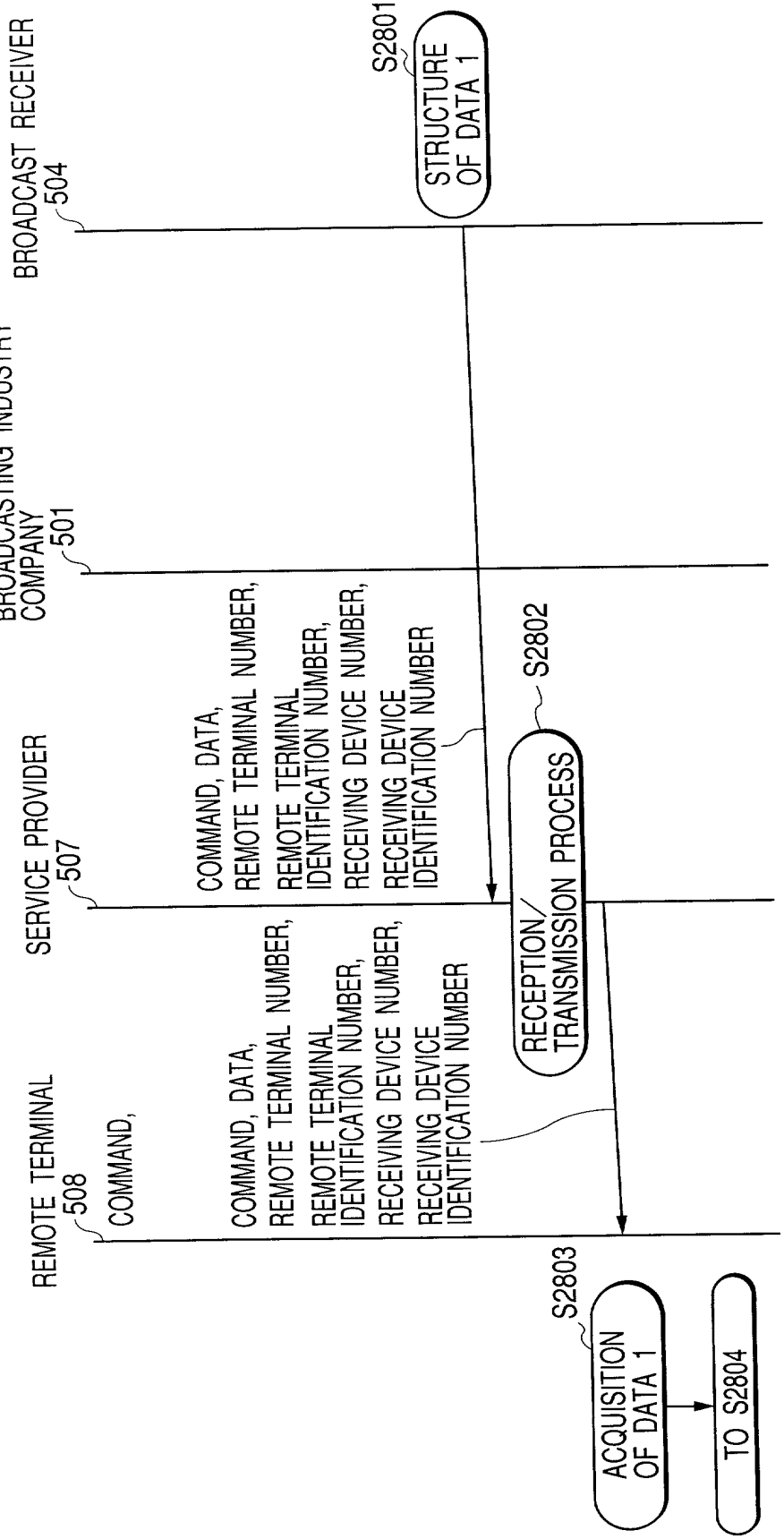
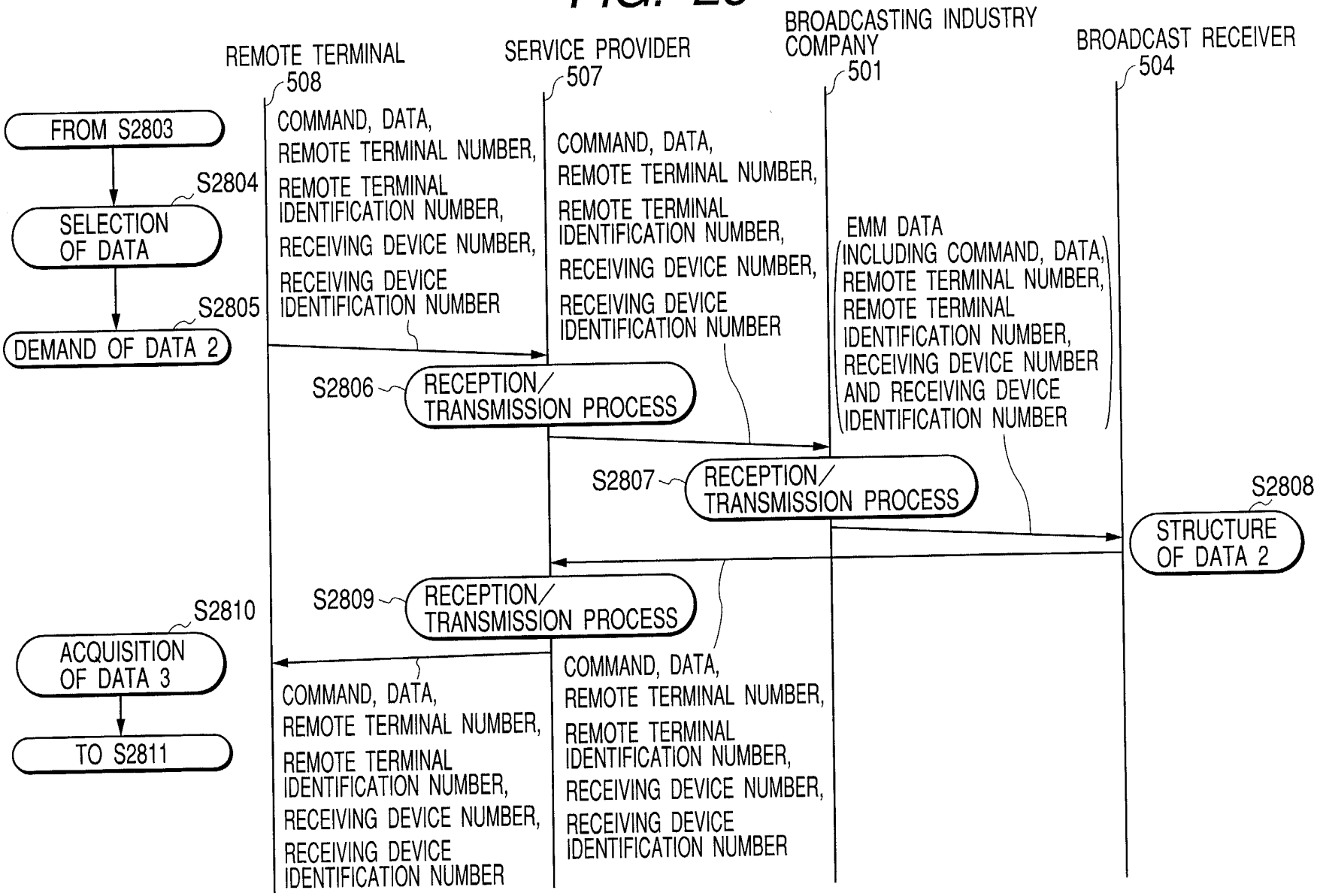

REMOTE TERMINAL
508
SERVICE PROVIDER
507
BROADCASTING INDUSTRY
COMPANY
501
BROADCAST RECEIVER
504
COMMAND,
COMMAND, DATA,
REMOTE TERMINAL NUMBER,
REMOTE TERMINAL
IDENTIFICATION NUMBER,
RECEIVING DEVICE NUMBER,
RECEIVING DEVICE
IDENTIFICATION NUMBER
COMMAND, DATA,
REMOTE TERMINAL NUMBER,
REMOTE TERMINAL
IDENTIFICATION NUMBER,
RECEIVING DEVICE NUMBER,
RECEIVING DEVICE
IDENTIFICATION NUMBER
S2801
STRUCTURE
OF DATA 1
S2802
RECEPTION/
TRANSMISSION PROCESS
S2803
ACQUISITION
OF DATA 1
TO S2804

FIG. 26


REMOTE TERMINAL
508
SERVICE PROVIDER
507
BROADCASTING INDUSTRY COMPANY
501
BROADCAST RECEIVER
504
FROM S2803
S2804
SELECTION OF DATA
S2805
DEMAND OF DATA 2
COMMAND, DATA, REMOTE TERMINAL NUMBER, REMOTE TERMINAL IDENTIFICATION NUMBER, RECEIVING DEVICE NUMBER, RECEIVING DEVICE IDENTIFICATION NUMBER
COMMAND, DATA, REMOTE TERMINAL NUMBER, REMOTE TERMINAL IDENTIFICATION NUMBER, RECEIVING DEVICE NUMBER, RECEIVING DEVICE IDENTIFICATION NUMBER
EMM DATA INCLUDING COMMAND, DATA, REMOTE TERMINAL NUMBER, REMOTE TERMINAL IDENTIFICATION NUMBER, RECEIVING DEVICE NUMBER AND RECEIVING DEVICE IDENTIFICATION NUMBER
S2806
RECEPTION/ TRANSMISSION PROCESS
S2807
RECEPTION/ TRANSMISSION PROCESS
S2808
STRUCTURE OF DATA 2
S2809
RECEPTION/ TRANSMISSION PROCESS
S2810
ACQUISITION OF DATA 3
TO S2811
COMMAND, DATA, REMOTE TERMINAL NUMBER, REMOTE TERMINAL IDENTIFICATION NUMBER, RECEIVING DEVICE NUMBER, RECEIVING DEVICE IDENTIFICATION NUMBER
COMMAND, DATA, REMOTE TERMINAL NUMBER, REMOTE TERMINAL IDENTIFICATION NUMBER, RECEIVING DEVICE NUMBER, RECEIVING DEVICE IDENTIFICATION NUMBER

TOP22T" 998E200T

FIG. 27

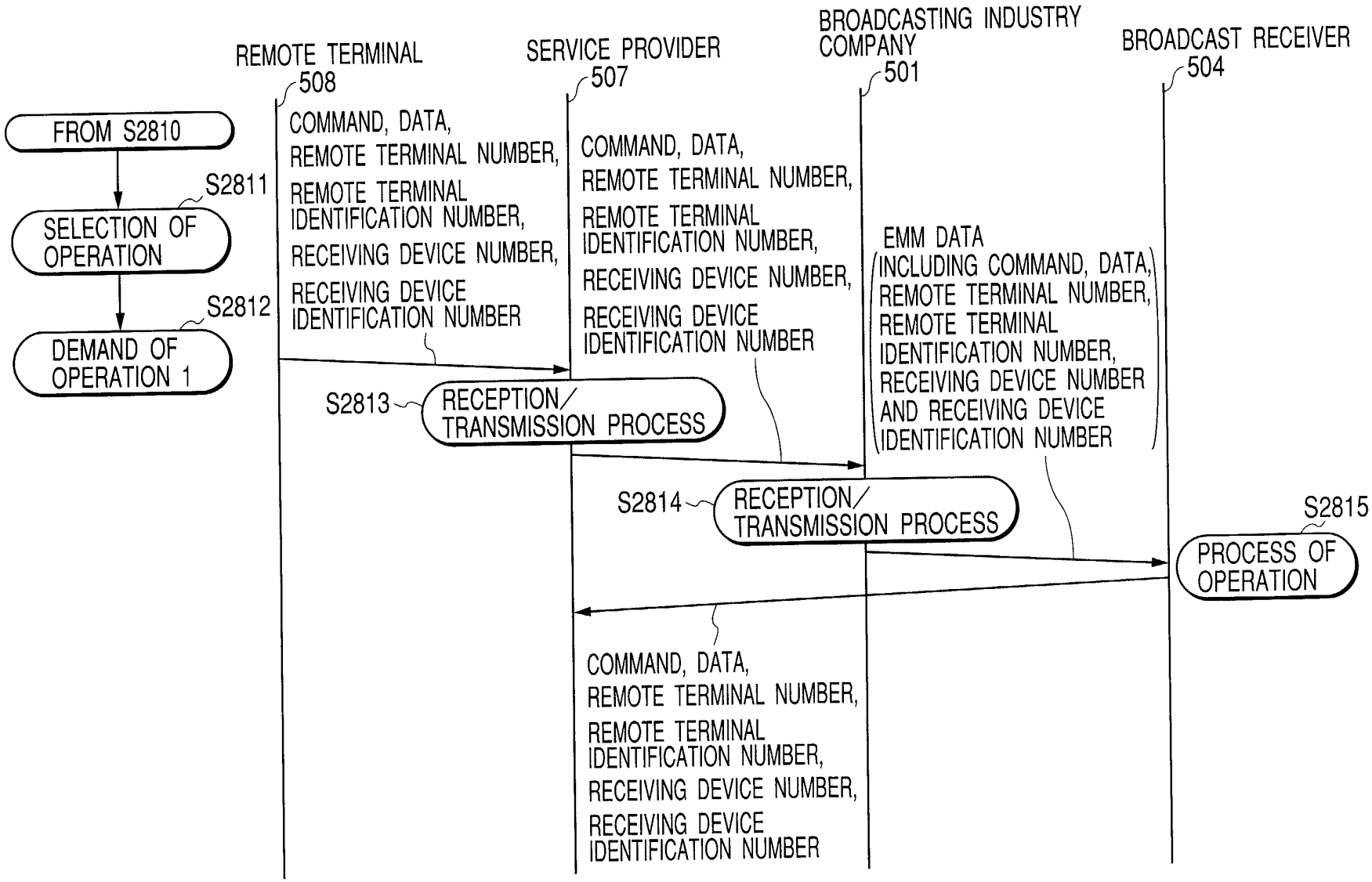


FIG. 28

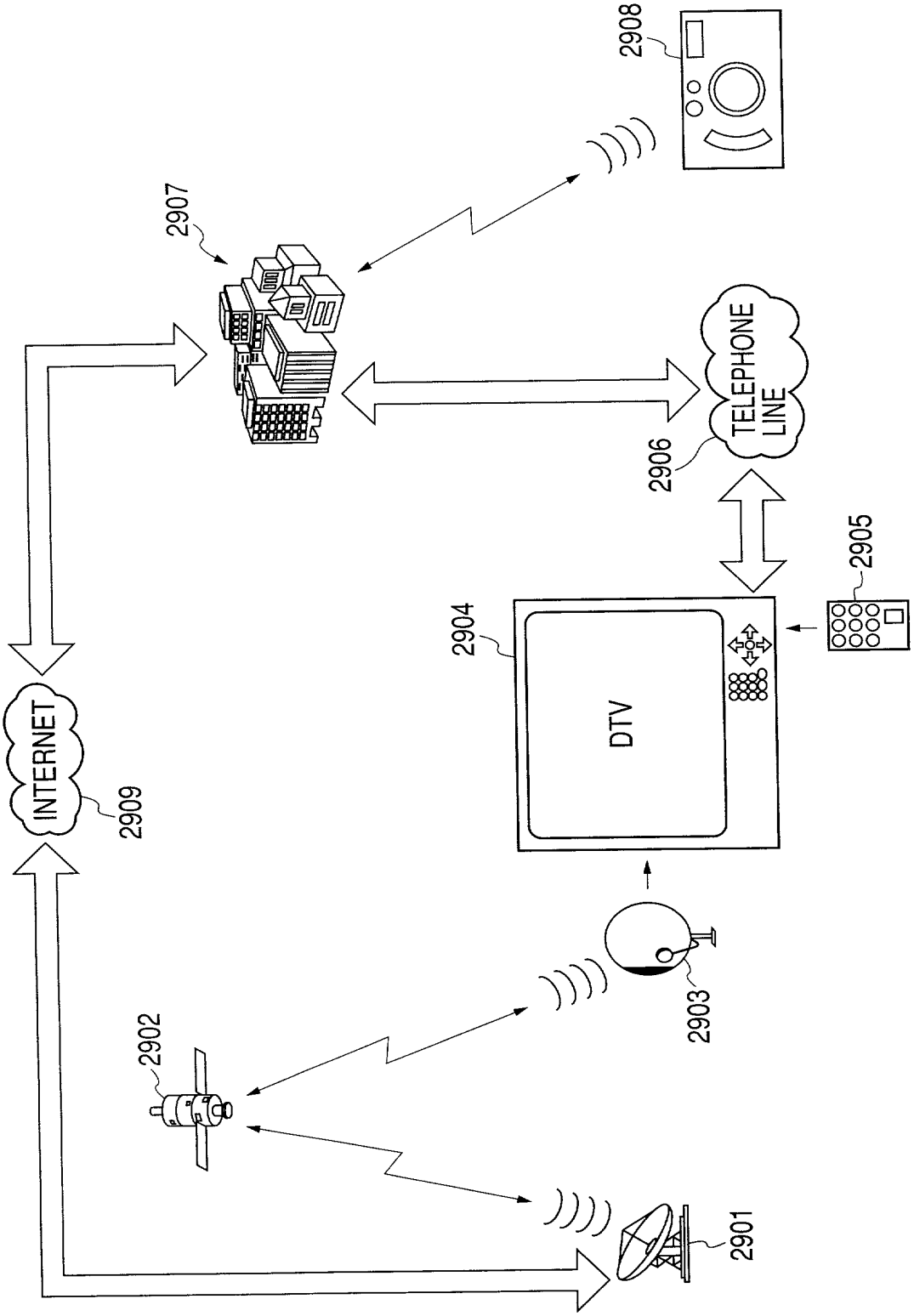

2908
2907
TELEPHONE LINE
2906
2905
2904
DTV
INTERNET
2909
2903
2902
2901

FIG. 29

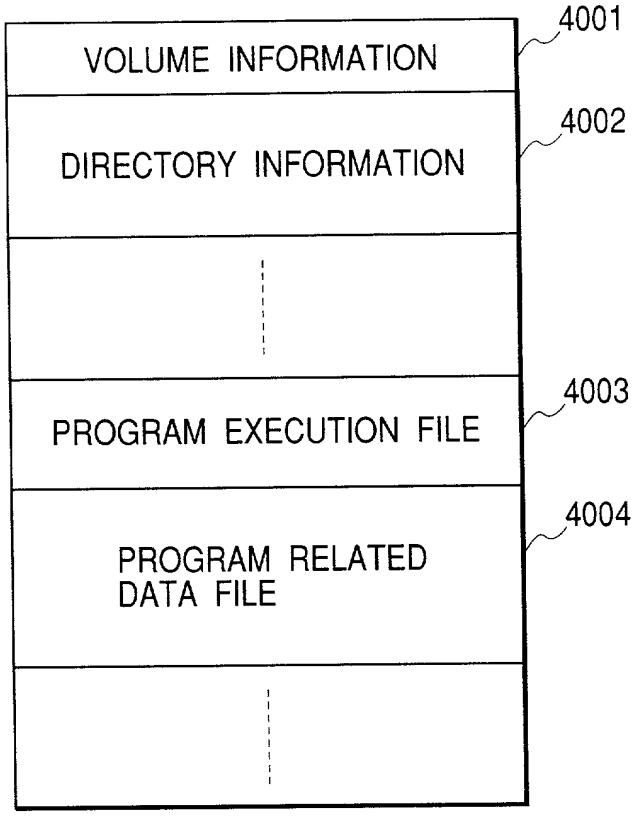

VOLUME INFORMATION
4001
DIRECTORY INFORMATION
4002
PROGRAM EXECUTION FILE
4003
PROGRAM RELATED DATA FILE
4004

FIG. 30

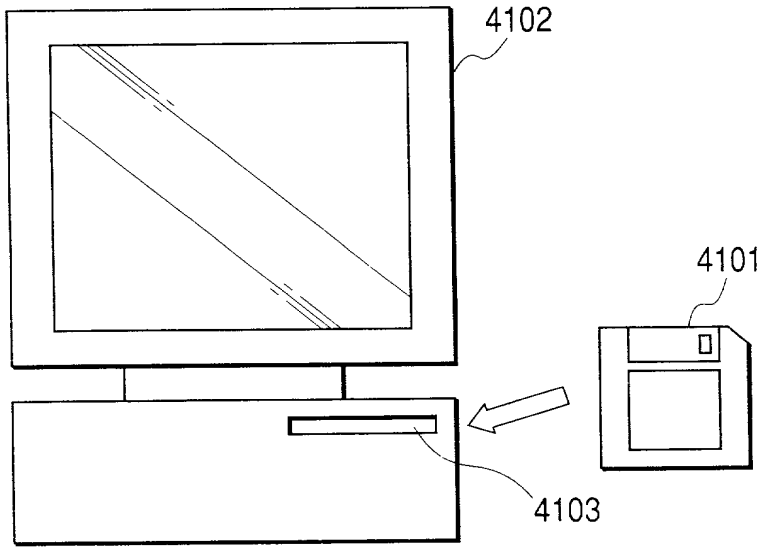

4102
4101
4103

FIG. 31

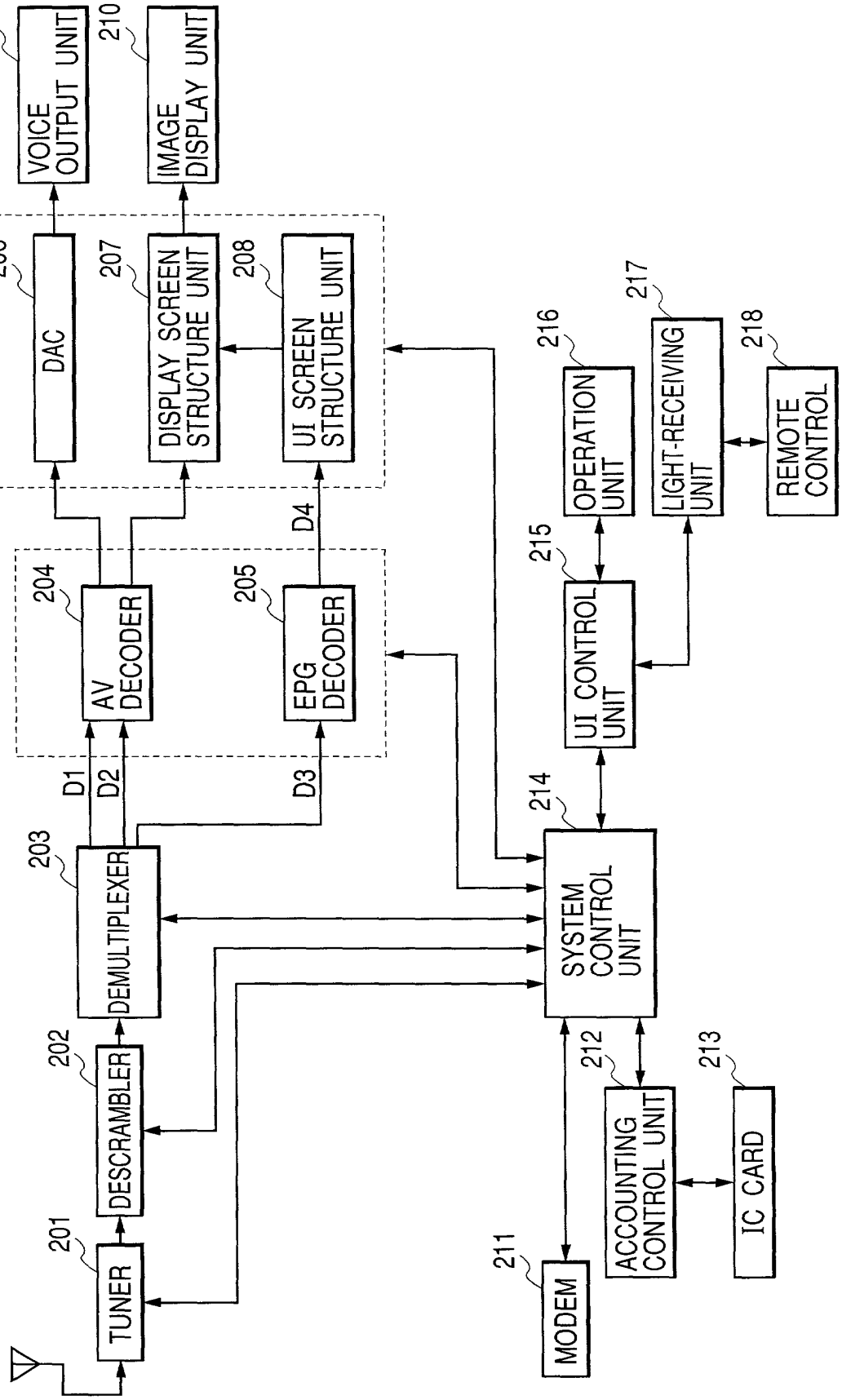

209
VOICE OUTPUT UNIT
210
IMAGE DISPLAY UNIT
206
DAC
207
DISPLAY SCREEN STRUCTURE UNIT
208
UI SCREEN STRUCTURE UNIT
204
AV DECODER
205
EPG DECODER
D1
D2
D3
D4
203
DEMULTIPLEXER
202
Ddescrambler
201
TUNER
214
SYSTEM CONTROL UNIT
215
UI CONTROL UNIT
216
OPERATION UNIT
217
LIGHT-RECEIVING UNIT
218
REMOTE CONTROL
211
MODEM
212
ACCOUNTING CONTROL UNIT
213
IC CARD

FIG. 32B

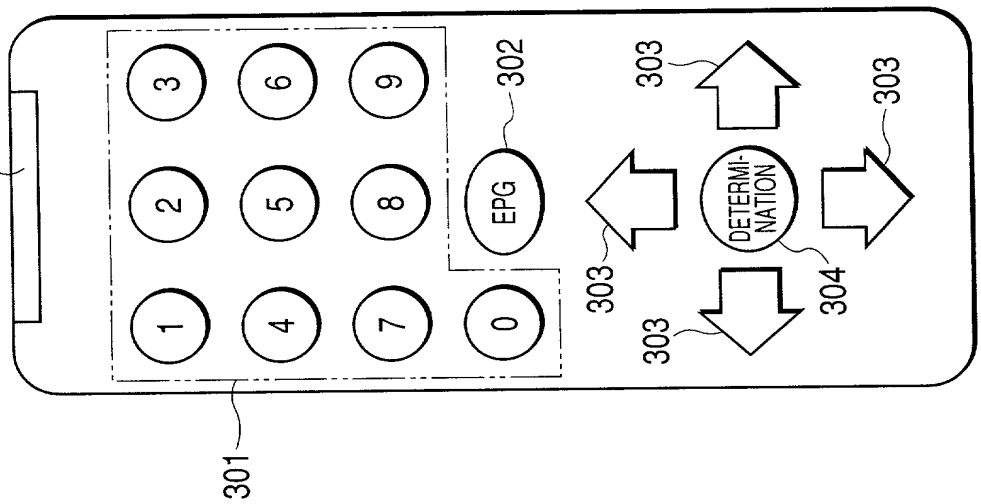


FIG. 32A

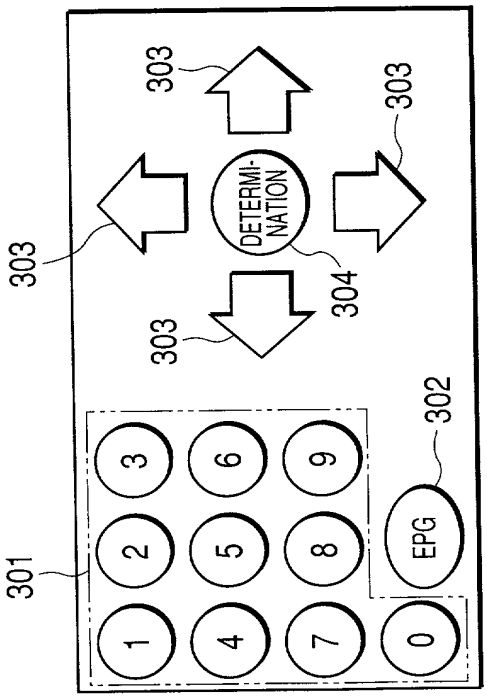
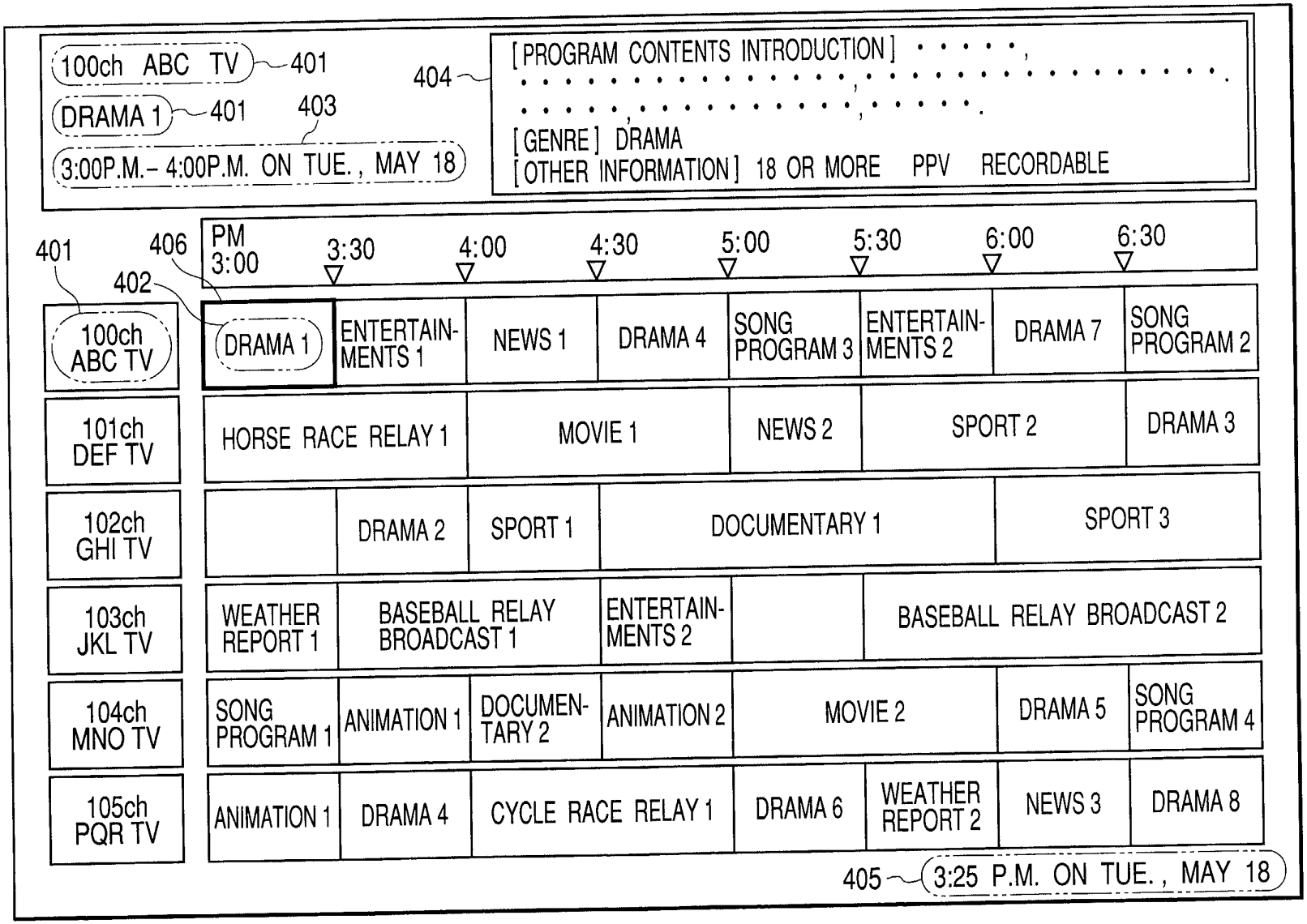


FIG. 33


100ch ABC TV
401
DRAMA 1
401
403
3:00P.M.– 4:00P.M. ON TUE., MAY 18
404
[PROGRAM CONTENTS INTRODUCTION] . . . . . .
[GENRE] DRAMA
[OTHER INFORMATION] 18 OR MORE PPV RECORDABLE
401
406
402
PM 3:00
3:30
4:00
4:30
5:00
5:30
6:00
6:30
100ch ABC TV
DRAMA 1
ENTERTAIN-MENTS 1
NEWS 1
DRAMA 4
SONG PROGRAM 3
ENTERTAIN-MENTS 2
DRAMA 7
SONG PROGRAM 2
101ch DEF TV
HORSE RACE RELAY 1
MOVIE 1
NEWS 2
SPORT 2
DRAMA 3
102ch GHI TV
DRAMA 2
SPORT 1
DOCUMENTARY 1
SPORT 3
103ch JKL TV
WEATHER REPORT 1
BASEBALL RELAY BROADCAST 1
ENTERTAIN-MENTS 2
BASEBALL RELAY BROADCAST 2
104ch MNO TV
SONG PROGRAM 1
ANIMATION 1
DOCUMEN-TARY 2
ANIMATION 2
MOVIE 2
DRAMA 5
SONG PROGRAM 4
105ch PQR TV
ANIMATION 1
DRAMA 4
CYCLE RACE RELAY 1
DRAMA 6
WEATHER REPORT 2
NEWS 3
DRAMA 8
405
3:25 P.M. ON TUE., MAY 18